AUTHOR INDEX

A

Abadi, D. M., 275
Abadom, P. N., 528
Abbott, J. P., 734
Abdel Kader, M. M., 444
Abeles, R. H., 625
Abelson, P. H., 366
Abercrombie, M. J., 158
Abood, L. G., 559
Abraham, R. J., 156
Abraham, S., 253
Abrams, R., 15, 16, 23, 25, 27, 50
Abramsky, T., 368
Abu, M., 724
Acermann, W. W., 134
Acker, D. S., 538
Ackerman, E., 602
Ackers, G. K., 87
Ackman, R. G., 722
Acree, F., 739
Acs, G., 499, 500, 696
Ada, G. L., 136
Adachi, K., 332
Adam, A., 343
Adam, H., 342
Adams, D. H., 131
Adams, E., 376
Adams, G. A., 157, 175, 735, 736
Adams, J. A., 626, 681
Adams, J. N., 116
Adamson, D. J., 466
Adamson, T. E., 681
Adelman, M. B., 276
Adey, W. R., 533
Adkins, H., 652
Adler, J., 66
Aebi, H., 557
Afonso, E., 302
Agar, W. T., 570
Ager, J. A. M., 312, 314, 316
Agranoff, B. W., 230
Ågren, A., 641
Ågren, G., 648
Ahlquist, L., 759
Ahmad, F., 327
Ahmed, K., 529, 530, 565, 566, 567
Ahrens, E. H., 226, 719, 721, 722
Ailhaud, G., 242
Aizawa, Y., 500, 691, 697
Akahori, Y., 723
Akashi, S., 258
Akazawa, T., 683
Åkerfeldt, S., 653
Albers, H. J., 250
Albers, R. W., 520, 521, 527, 559, 628
Albersheim, P., 334
Albert, A., 435
Alberts, A. W., 257, 661
Albertsson, P. A., 51, 97, 98
Alberty, R. A., 579, 580, 596, 598, 620, 622, 668
Albrecht, A. M., 480
Albrecht, M., 216, 217
Albright, C. D., 529, 554, 559
Alburn, H. E., 643
Aldag, H. U., 426, 428
Aldridge, W. N., 559
Aleman, V., 378, 443, 604, 605, 607, 615
Alenty, A., 188
Alexander, A. E., 284
Alexander, J. A., 502
Alexander, M., 19, 20, 21, 34, 73, 497, 498, 499, 696
Alexander, N. M., 384
Alexander, P., 68, 290
Alfsen, A., 688
Algranati, I. D., 329, 331
Allen, D. W., 302, 303, 316, 500
Allen, E. H., 500
Allen, J. N., 519
Allende, C. C., 532
Allende, J. E., 289, 293
Allfrey, V. G., 31, 32, 50, 51
Allison, A. C., 126, 138, 215, 316
Allison, H., 290
Allison, M. J., 258, 369
Allison, W. S., 57, 61, 63, 100
Allums, J. A., 568
Alm, J., 739
Alman, R. W., 545
Almeida, J. D., 129
Altenbern, R. A., 420
Altman, K. I., 373
Altman, R. L., 464, 466
Altshuller, A. P., 737
Altszuler, N., 247
Amberg, R., 363
Ames, A., 541
Ames, B. N., 97, 374
Ames, G. R., 155
Amin, E. S., 174
Amoz, S., 501
Anand, N., 173
Anderer, F. A., 120
Anders, D. E., 722
Anders, M., 16, 17, 21, 50, 104, 106, 107
Anders, M. W., 734, 739
Anderson, A. D., 360
Anderson, B. M., 647, 654, 666, 668
Anderson, C., 156, 166, 167, 170, 360
Anderson, E. P., 463-512; 464, 466, 468, 469, 470, 471, 474, 476, 477, 478, 479, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493
Anderson, E. W., 122, 128
Anderson, G. W., 663
Anderson, J., 557, 558
Anderson, L., 175, 363, 648
Anderson, M. L., 186
Anderson, R. C., 444
Anderson, R. L., 339
Anderson, S. G., 136
Anderson, T. F., 84, 95, 129, 133
Anderson, W. F., 57, 60, 70, 71, 72, 91
Andersson, C.-O., 765, 767, 768
Andervont, H. B., 128
Andre, E., 223
Andrê, J. A., 469, 472
Andreatch, A. J., 737
Andredi, T. E., 589
Andrewes, C. H., 89
Andrews, J. S., 264
Andrews, K. J. M., 653
Anet, E. F. L. J., 157
Anet, F. A. L., 155, 157, 160
Anfinsen, C. B., 101, 107, 286, 289, 405, 406, 519, 625, 683
Angerer, S., 122
Angyal, S. J., 158
Annis, J. L., 756
Annison, E. F., 251
Ansano, K., 105
Ansell, G. B., 221, 224, 225, 228, 363
Anthony, K. V., 716, 719, 720, 721
Anthony, W. C., 775
Antia, N. J., 159
Antonini, E., 304, 315, 316
Antonov, A. S., 47, 48
Antonov, V. F., 540
Aoyagi, T., 138
Apgar, J., 28, 29, 35, 36

Aposhian, H. V., 111, 486, 490
Appella, E., 618, 627
Applebaum, S. W., 360
Appleby, C. A., 612
Appleman, M. M., 331
Araki, S., 737
Arber, W., 117, 118
Archibald, A. R., 325
Ardenne, R., 167
Arlinghaus, R., 500
Armstrong, D. T., 247
Armstrong, F. B., 368
Armstrong, J. A., 122, 128
Armstrong, N., 138
Arnon, D. I., 618
Arnstein, H. R. V., 500
Aron, S. A., 243, 244
Aronovitch, J., 407
Aronow, L., 470
Aronson, A. I., 21, 108, 500
Aronson, J. N., 175
Arrhenius, E., 694
Arrigoni, O., 401, 606, 629
Arthur, H. R., 726
Artman, M., 499, 501
Artom, C., 220, 221
Arya, V. P., 764
Asahi, T., 403, 617
Asai, M., 425, 426, 428
Asano, K., 22, 25, 35
Aschaffenburg, R., 278
Asheshov, I. N., 140
Ashikaga, Y., 370
Ashkenazi, I., 343
Ashton, D. M., 469
Ashwell, G., 322, 323, 328, 334, 344, 346
Ashworth, C. T., 555
Askari, A., 374
Asnis, R. E., 400
Aspen, A. J., 366
Aspinall, G. O., 155, 158, 164, 736
Asselineau, C., 762
Asselineau, J., 722, 762, 768
Astrachan, L., 19, 21, 25, 32, 50
Atherton, N. M., 616
Atkinson, D. E., 595
Atkinson, M. R., 465, 470, 598
Attardi, G., 21, 22, 32, 135, 486
Attaway, J. A., 726, 738
Aubert-Combiescu, A., 133
Auer, T., 175
Auerbach, V. H., 698, 699
August, J. T., 21, 104, 106, 107, 115
Augustinsson, K. B., 656
Auhagen, E., 433
Aukland, L., 558, 563
Aurbach, G. D., 407
Aurich, H., 421
Aurisicchi, S., 118
Avery, O. T., 43
Avey, H. P., 277, 284
Awapara, J., 388, 389
Axelrod, A. E., 456
Axelrod, J., 384, 514, 524, 544
Ayengar, P., 421
Ayling, J. E., 124
Azarkh, R. M., 388

B

Bablanian, R., 140
Bach, M. K., 124, 126
Bachelard, H. S., 529
Bachhawat, B. K., 329, 337
Bachrach, H. L., 136
Bacila, M., 337, 629, 677
Back, K. J. C., 367
Backus, E. J., 477
Bacq, C. M., 115
Badano, B. N., 678
Baddiley, J., 164, 322, 325, 326, 336, 422
Bader, H., 564
Bader, R. F. W., 658
Baer, H. H., 169
Baggett, N., 155
Baglioni, C., 311, 312, 316
Bagtell, F. K., 111
Baich, A., 371, 447
Bailey, H. R., 293
Bailey, J., 111
Bailey, R. W., 334
Bailey, S. D., 726, 740
Baird, S. L., Jr., 538
Baker, B. R., 156, 165, 167, 170, 171, 174, 291
Baker, H. T., 473, 474
Baker, J. E., 372
Baker, P. F., 539, 540
Baker, R. H., 619, 620, 624, 657
Bakerman, H., 200
Balakrishnan, S., 526
Balassa, G., 496
Balazs, E. A., 283
Baldwin, R. L., 53, 56, 61, 63, 64, 66, 292, 492
Balinsky, D., 629
Balis, M. E., 134, 469, 471
Ball, D. H., 175
Ball, E. G., 247, 248, 253
Ballard, D. G., 652
Ballou, C. E., 162, 173, 235
Balmer, G., 291
Balog, J., 302, 303
Baltes, W., 168
Baltimore, D., 50, 133
Baltz, B. E., 698
Bamford, C. H., 652
Banay, M., 346
Banay-Schwartz, M., 610
Banazak, L. J., 272
Bancroft, J., 87, 121
Bandurski, R. S., 403, 617
Banerjee, A. B., 332
Bang, H. O., 721
Banga, I., 532
Banj, F. B., 122
Banks, B. E. C., 385, 650, 655
Banks, J., 686
Bannerman, R. M., 316
Bannister, H. M., 731
Barber, G. A., 322, 324, 326
Barbier, M., 741, 775
Barbieri, P., 453
Barchielli, R., 452
Barclay, R. K., 54, 55, 477
Bardell, D., 131
Barker, G. R., 155, 174
Barker, H. A., 453, 454, 455, 601, 648
Barker, I. R. L., 159
Barker, R., 161, 175
Barker, S. A., 155, 168, 169
Barlow, J. L., 108
Barnabas, J., 312
Barnabei, O., 386
Barnard, E. A., 288, 658
Barner, H. D., 105, 108, 109, 111, 202, 205
Barnes, A. C., 734
Barnes, J. M., 73, 74
Barnett, H. W., 485
Barnett, J. E. G., 157
Barnett, L., 67, 68, 69, 92, 95, 96, 97, 102, 491
Barnett, W. E., 464, 487
Baron, D. N., 681
Baron, L. S., 47, 49
Baronowsky, P., 255, 259, 260
Barreto, H. S., 738
Barrett, J. T., 570
Barrette, J. P., 157, 174
Barrionuevo, M., 723
Barrnett, R. J., 555
Barron, E. J., 259, 261, 264
Barron, E. S. G., 400, 617
Barry, J. M., 290
Barski, G., 131
Bartell, L. S., 657
Bartels, H., 340
Bartley, W., 216, 218, 260, 261
Barton, R., 738
Bartosinski, B., 452
Bartz, Q. R., 156, 171, 172
Basilio, C., 24, 499, 501, 693
Basinski, D., 580, 596
Basolo, F., 651

Bassham, J. A., 346, 362
Bassler, L., 730
Basso, L. V., 366
Bastarrachia, F., 594
Basu, D. K., 329
Bates, B., 466
Bates, F., 693
Bates, R. B., 723, 725
Bate-Smith, E. C., 745
Batt, R. D., 338
Baudras, A., 613
Bauer, L., 168
Bauer, V. E., 656
Baum, H., 331
Bauman, A. J., 516
Baumann, J. B., 113
Bautz, E., 18, 31, 32, 50, 67, 68, 93, 94, 105
Bautz-Freese, E., 67, 68, 93, 94
Bavley, A., 737
Bawden, F. C., 121, 484
Bawn, C. E. H., 644
Baxter, C. F., 513-52; 420, 518
Baxter, C. J., Jr., 735
Baxter, J. N., 162
Bayer, E., 730
Bayliss, L. E., 558
Baylor, M. B., 67, 68, 94
Bazinet, M., 726, 740, 741
Beaconsfield, P., 343
Beals, T., 138
Beams, J. W., 89, 292
Beard, D., 130, 131
Beard, J. W., 130, 131
Bearden, J. H., 242, 243
Beare, J. L., 250
Beason, L. R., 287
Beaton, G. H., 702
Beattie, D. S., 385, 386, 586
Beauchamp, K., 590
Beaudreau, G. S., 130, 131
Beaven, G. H., 302, 304, 316
Becher, E., 452, 453
Bechet, J., 372
Bechtold, M. M., 606
Beck, D., 163
Beck, J. C., 251
Beck, L. W., 242
Beck, W. S., 454
Becker, C., 130
Becklake, M. R., 316
Bedell, B. H., 591
Beer, M., 45, 46, 54, 56, 58, 62, 100
Beernink, K. D., 340
Beers, R. F., 665
Beerthuis, R. K., 711
Beetlestone, J. G., 314
Beevers, H., 334, 527
Begemann, P. H., 722, 727
Behrman, E. J., 362, 365
Beinert, H., 585, 586, 604, 605, 607, 608, 615, 616
Beiser, S. M., 51, 63
Belkhode, M. L., 345
Bell, A., 136
Bell, P. H., 686
Bell, R. P., 642, 654
Bellamy, D., 358
Bellar, T., 737
Bellett, A. J. D., 132
Bello, J., 276, 277
Bello, L. J., 110, 111
Belman, S., 57
Beloff-Chain, A., 343
Belozerskii, A. N., 47, 48
Beltz, R. E., 203
Bender, M. L., 639, 640, 641, 643, 646, 647, 652, 654, 655, 657, 668, 669
Bendet, I., 45, 95, 96, 113
Bendich, A., 43, 44, 45, 51, 63, 129
Bendz, G., 775
Benedict, A. A., 138
Benedict, C. A., 334, 627
Benedict, M., 499, 501
Benedict, R. G., 723
Benerecetti, S. A., 409
Benesch, R., 275, 315
Benesch, R. E., 275, 315, 661
Bengen, F., 287
Ben-Ishai, R., 485
Benitez, A., 156, 166, 167
Benjamin, W., 249, 256
Benkovic, P., 655, 657
Benn, M. H., 168
Bennet, C., 99
Bennett, H. S., 217, 555
Bennett, L. L., 19
Bennett, L. L., Jr., 464, 465, 466, 468, 469, 471, 473, 474, 476, 477, 479, 497, 498
Bennett, M. C., 374
Bennett, P. L., 501
Bennett, R., 391, 599, 601
Bennett, S. J., 468
Benoiton, L., 647
Ben-Porat, T., 48, 127, 128, 494, 496
Benson, A. A., 226, 227, 362
Benson, R. E., 538
Bentinck, R. C., 677
Bentley, R., 159, 381, 657
Benzer, A., 18, 24, 31, 36, 69, 91, 92, 95, 97, 106, 311, 464, 487
Berchtold, R., 502
Berdick, M., 737, 738
Berenbaum, M. C., 469
Berends, W., 70, 492
Berendsen, H. J. C., 283, 535
Berg, P., 15, 16, 17, 18, 21, 23, 28, 35, 36, 50, 51, 104
Bergan, J. G., 328
Berger, A., 289, 652, 662, 663
Berger, J. E., 278, 279
Bergeron, J., 415
Bergmann, F., 468, 601
Bergold, G. H., 128
Bergquist, P. L., 464, 465, 470, 475
Bergren, W. R., 312
Bergström, S., 762, 763, 776
Bergy, M. E., 494
Berhard, R. A., 731
Berl, S., 359
Berman, E. R., 526
Berman, M. D., 557
Bernal, J. D., 283
Bernardi, G., 51
Bernath, P., 579, 597, 607, 613, 614
Berne, E., 522
Berner, E., 159
Bernhard, K., 259
Bernhard, S. A., 647
Bernhard, W., 131
Bernhauer, K., 452, 453, 454
Bernheim, F., 628
Bernheimer, A. W., 527
Bernkopf, H., 122
Berns, I. I., 98, 99
Berns, K., 45, 57, 60, 61, 70, 71, 72, 91, 100
Bernstein, E. H., 583
Bernstein, H. J., 155, 156, 157
Bernstein, I. A., 339
Beroza, M., 739, 741
Berrah, G., 107
Berry, J. F., 358
Bertino, J. R., 187, 188, 189, 193
Berwick, L., 129
Bessey, O. A., 188
Bessman, M. J., 110, 111
Bestmann, H. J., 173
Bethell, F. H., 223
Bethune, J. L., 293
Bettin, K. L., 164
Beukers, R., 70, 492
Beutner, E. H., 122
Beychok, S., 278, 294, 660
Beynon, J. H., 755, 756, 757
Bezard, J., 242, 721
Bezman, A., 244
Bhaduri, A., 253
Bhate, D. S., 657
Bieber, L. L., 216
Bieber, S., 468, 471, 472
Biemann, K., 755-80; 729, 755, 757, 765, 767, 768, 769, 770, 771, 772, 775
Bierstedt, P. E., 538
Bigelow, C. C., 383
Bigley, N. J., 527

Bihler, I., 568
Billen, D., 66, 420
Binette, Y., 376, 390
Binkley, F., 411
Binnie, B., 65, 66
Biran, L. A., 216
Birbeck, M. S. C., 54
Birch, A. J., 428
Birch-Anderson, A., 113
Bird, F. T., 128
Bird, O. D., 424, 431
Birnie, G. D., 485
Bishop, C. T., 157, 175, 734, 735, 736
Bishop, D. G., 723
Bishop, J. S., 247
Bisi, C. C., 539
Biswas, B. B., 23, 50
Björntorp, P., 244
Black, E. D., 741
Black, S., 399-418; 400, 401, 402, 404, 615, 617
Blackburn, G. M., 167
Blacklow, R. S., 322, 337
Blair, A., 336
Blair, M. G., 160
Blake, C. C. F., 276
Blakley, R. L., 186, 187, 189, 190, 197, 201, 202, 203, 204, 205, 628
Blakrishnan, S., 234
Blanchaer, M., 342
Blank, F., 734
Blankenship, J. W., 368
Blaskovic, D., 484
Blecher, M., 679, 680
Bloch, A., 223
Bloch, K., 255, 257, 258, 259, 260, 261, 722, 723, 777
Blocker, T. G., 340
Blodinger, J., 663
Blois, M. S., Jr., 545
Blomstrand, R., 226
Bloom, B., 682
Bloom, E. S., 203, 431
Bloom, S. M., 271
Bloomfield, D. K., 259, 734
Blout, E. R., 55, 271, 277, 278, 293, 294, 658, 660
Blow, D. M., 281
Blum, L., 113, 114
Blum, M. S., 727, 732
Blumenthal, H., 172, 337, 478
Blumson, N. L., 322, 326, 336
Bly, R. K., 775
Bock, R. M., 583
Bockstahler, L. E., 121
Bodansky, O., 627
Bodanszky, A., 285, 286
Bodel, P. T., 251
Bodman, J., 223
Bodo, G., 308
Boeri, E., 612, 613, 614
Boeye, A., 133
Boggus, J. D., 727, 732
Bognár, R., 168
Bognár, V., 169
Bogoch, S., 232, 233
Bohemen, J., 717
Bohonos, N., 477
Bolle, A., 25
Bolton, C. H., 171
Bolton, E. T., 21, 22, 31, 50
Bomstein, R., 583
Bonar, R. A., 131
Bonavita, V., 478
Bonner, D. M., 50
Bonner, J., 50, 73, 697
Bonner, T. G., 155, 172
Bonner, W., 160, 163, 164, 168, 171, 172, 651
Bonnett, R., 450
Bonnichsen, R., 623
Bono, V., 481, 482, 483
Bonsignore, A., 342, 344, 629
Bonthilet, R. J., 724
Bonting, S., 529, 559, 560
Booth, B. A., 473, 474, 480
Booth, V. H., 740
Borek, E., 22, 23, 24, 26, 32, 118, 206, 207, 488
Borek, F., 290
Borenfreund, E., 45
Borer, R., 327
Boretti, G., 452, 453
Borgstrom, B., 241
Borkenhagen, L. F., 646
Borman, G. S., 129
Börresen, H. C., 404
Borrmann, D., 162
Borst, P., 358, 385, 589, 590, 592
Bos, C. J., 340, 559
Bose, J. L., 159
Bothner-By, A. A., 283
Böttcher, C. J. F., 216, 717
Boulanger, P., 230, 366
Bourgeois, S., 371
Bourne, E. J., 158, 162, 172
Bouthillier, L. P., 376, 390
Bovet, D., 539
Bovey, F. A., 283, 663
Bowden, B., 470
Bowering, W. D. S., 159, 164
Bowers, M. D., 360
Bowman, B. H., 311
Bowman, R. L., 712, 718
Boxer, G. E., 339
Boyce, R., 113, 114, 492
Boyd, J. W., 385
Boyd, T. C., 477
Boyde, T. R. C., 385
Boyer, G. S., 129
Boyer, P. D., 342, 358, 399, 405, 645, 646, 660, 662
Boyes-Watson, J., 279
Boyle, R. D., 292
Bradbeer, C., 222
Bradbury, E. M., 54, 55
Bradford, R. H., 337
Bradley, D. E., 113
Bradley, S. G., 115, 497
Bradley, T. R., 466, 467, 480
Bradshaw, W. H., 601
Brady, O. L., 655
Brady, R. O., 255, 454, 455, 520, 521
Bragdon, J. H., 249
Bragg, P., 158
Brakke, M. K., 87, 88
Brandenberger, H., 721
Brandon, N. E., 647
Brattgård, S.-O., 522, 523
Bratton, A. C., 194
Braunitzer, G., 303, 306, 307, 308
Braunshtein, A. E., 388, 650
Bray, R., 452, 603, 604
Braymer, H. D., 389
Brazhnikova, M. G., 171
Bredenberg, J. B., 738
Bredereck, H., 164, 175
Breedis, C., 129
Breese, S. S., 135
Bregoff, H. M., 420
Brehm, A., 648
Breiger, H. H., 597
Breitman, T., 483
Bremer, J., 363, 404
Brenner, R. R., 255
Brenner, S., 24, 48, 50, 51, 67, 68, 88, 90, 92, 95, 96, 97, 102, 105, 106, 491
Brenner-Holzach, O., 435, 436, 437
Breslow, E., 272
Breslow, R., 160, 590, 639, 640, 650
Bresnick, E., 489
Bressler, R., 252, 253
Breuer, H. J., 557
Brewster, J. H., 158
Brezina, R., 140
Brice, C., 161
Bridgers, W. F., 383
Brierley, G., 218
Briggs, S. D., 502
Brignone, J. A., 678
Brill, A. S., 602
Brillouin, L., 538, 539
Brimacombe, E., 159
Brimacombe, J. S., 159, 169
Brink, N. G., 140
Britten, R. J., 21, 22
Brocherê, M., 764
Brochmann-Hanssen, E., 728,

738, 739
Brock, M. L., 479
Brock, T. D., 479, 570
Brockerhoff, H., 235
Brockman, H. E., 464, 487
Brockman, J. A., 206
Brockman, R. W., 463-512; 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 475, 477, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 497, 502, 680
Brodetsky, A. M., 115
Brodie, B. B., 248, 545
Brohult, A., 223
Brookes, P., 67, 68, 95, 491
Brookes, V. J., 216
Brooks, C. W. J., 734
Brooks, S. A., 173
Brooks, S. C., Jr., 477
Broquist, H. P., 206, 366
Broschard, R. W., 494, 497
Brossmer, R., 526, 527
Brown, D. H., 329, 332
Brown, D. M., 653
Brown, F., 136
Brown, G. L., 26, 51, 54
Brown, G. M., 419-62; 186, 422, 424, 425, 432, 433, 435, 436, 437, 438, 440, 441, 443, 444, 452, 590, 650
Brown, G. W., Jr., 485
Brown, H. B., 248
Brown, H. W., 545
Brown, J. B., 734
Brown, J. D., 681
Brown, J. F., 654
Brown, J. F., Jr., 287
Brown, J. L., 242, 264
Brown, R., 543
Brown, R. A., 44, 133, 431, 759
Brown, R. J., 138
Brown, S. A., 741
Brown, S. J., 388
Brownstein, S., 156
Browstein, A. M., 625
Brucker-Voight, L., 722
Brueggemann, J., 411
Bruemmer, N. C., 481
Bruice, T. C., 385, 640, 641, 647, 648, 650, 654, 655, 656, 657, 664, 665, 668, 669
Bruning, W., 287
Bruno, J. J., 647, 654, 655, 657, 668
Bruns, F. H., 392
Brusca, A., 702
Bruun, H. H., 764
Bryant, M. P., 369
Bublitz, C., 251
Buchanan, J. G., 170, 325
Buchanan, J. M., 107, 110, 112, 192, 193, 194, 195, 198, 199, 202, 207, 208, 209, 210, 431, 469, 470, 476
Bücher, T., 340, 591
Buck, R. E., 477, 493
Buck, W., 422
Budnick, L. E., 702
Budowsky, E. I., 324
Budzikiewicz, H., 762, 763
Bueding, E., 332
Buell, M. V., 520
Buifle, R., 652
Bukrinskaya, A. G., 138
Bull, H. B., 279
Bunnett, J. F., 642, 654, 655
Bunting, R. F., 89, 292
Bunton, C. A., 651, 657
Bunville, L. G., 47, 56, 294
Burchenal, J. H., 165
Burchfield, H. P., 738
Burdon, R. H., 487
Burford, H., 562
Burg, M., 559
Burg, S. P., 732
Burgen, A. S. V., 563
Burger, M., 324, 371, 567
Burgi, E., 45, 46, 98, 103
Burk, D., 465
Burkard, W. P., 389
Burke, J., 739
Burkhalter, A., 389
Burma, D. P., 50, 466
Burness, A. T. H., 132
Burnet, F. M., 89, 138
Burnett, G., 566
Burnett, J. B., 382
Burns, J. J., 345, 419
Burns, R. D., 370
Burrous, M. J., 124
Burrow, D. J., 335
Burrows, E. P., 775
Burton, K., 52, 53, 106, 107, 491
Burton, R. M., 324
Busch, D., 344
Bush, I. E., 709, 745
Bussard, A., 18
Butcher, R. W., 331
Butenandt, A., 693
Butler, A. R., 655
Butler, J. A. V., 282
Butler, R. C., 429
Butler, T. C., 740
Butler, V. P., 63
Butler, W. W. W. III, 696
Buttery, R. G., 730, 738
Buzard, J. A., 400, 401
Buzzell, A., 119
Byerrum, R. U., 444
Byrne, W. L., 646

C

Cabib, E., 321-54; 324, 329, 331
Cacace, F., 719
Cadenas, E., 347, 413, 568, 569
Cadman, C. H., 121
Cafruny, E. J., 412
Cain, J. C., 157
Cairns, H. J., 98
Cairns, J., 45, 46, 47, 98, 124
Calabresi, P., 481, 482, 483, 492, 501
Calderella, L. A., 477
Caldwell, P. C., 556, 557, 558, 559
Calhoun, M. C., 375
Calkins, D. G., 431
Calkins, E., 557
Callely, A. G., 362
Calvin, M., 346, 362
Camiener, G. W., 438, 440, 441
Campbell, A. D., 558
Campbell, C. J., 431
Campbell, J., 122, 373
Campbell, L. L., 333
Campbell, N. K., 561
Canellakis, E. S., 15, 21, 26, 27, 488
Canellakis, Z. N., 26, 488, 700
Canfield, T. M., 373
Cann, J. R., 293
Cannon, J. R., 450
Cantarow, A., 696
Cantin, P. L., 232
Cantino, E. C., 387
Cantoni, G. L., 30, 35, 37
Cantrell, R., 368
Caplow, M., 647, 657, 669
Capon, B., 158, 161
Caputi, A., 724
Caputo, A., 315, 316
Caputto, R., 138, 470, 474
Caravaca, J., 661
Caravaggio, L. L., 529, 559
Carbon, J. A., 468
Cardini, C. E., 333
Cardoso, S. S., 481, 483
Carey, N. H., 468, 471
Carhart, E., 412
Carlberg, D. M., 115
Carlin, H., 347, 413
Carlisle, C. H., 277, 284
Carlson, D. M., 322
Carlson, G. L., 590, 650
Carlsten, A., 251
Carlström, A., 627
Carlton, B. C., 376
Carminatti, H., 324, 329
Carnahan, J. E., 618
Caro, L. G., 105, 514, 524, 555

Carp, R. I., 133
Carr, H. F., 734
Carriuolo, J., 647, 648, 654, 655, 656, 657, 669
Carroll, W. R., 607
Carruthers, A., 334
Carruthers, W., 737
Carsiotis, M., 377
Carson, J. F., 740
Carter, H. E., 158, 171, 224, 728
Cartwright, B., 136
Carubelli, R., 138
Carugno, N., 732
Case, J. D., 775
Caskey, C. T., 469
Caspar, D. L. D., 88
Casper, R. A., 132
Cassman, M., 682, 683
Castanera, E. G., 454, 455
Castle, W., 130
Castoren, O., 730
Catanzaro, R., 343
Cathou, R. E., 198, 199, 207, 210, 431
Cavalieri, L. F., 16, 45, 46, 62, 63, 64
Cavallini, D., 407, 409, 410, 422
Cavanagh, L. A., 739
Caveness, W., 519
Cecil, R., 316, 399
Ceder, O. J., 775
Cedrangolo, F., 373
Century, B., 249
Cepure, A., 322, 324, 337
Čerfy, M., 160
Cha, S., 465, 472
Chaiet, L., 431
Chaikoff, I. L., 253
Chain, E. B., 343, 347, 358
Chakraborty, K. P., 478
Chakraverty, K., 362
Chakravorty, M., 337, 466, 629
Chalmers, T. M., 248
Chamberlin, J. W., 762, 763
Chamberlin, M., 16, 50, 51, 104
Chambers, L. A., 737
Chambers, P., 488
Champe, S. P., 18, 24, 69, 91, 92, 95, 97, 102, 106, 464, 487
Chan, B. G., 157
Chan, P. C., 432
Chanarin, I., 374
Chance, B., 541, 581, 583, 590, 591, 680
Chandrasekhar, B. K., 120
Chang, M. L. W., 520
Chang, P. K., 492
Chang, T. L., 722
Chang, Y. T., 399
Changeux, J. P., 370, 689, 697
Chantrenne, H., 464, 466, 486, 500
Chao, F. C., 376
Chapeville, F., 24, 411
Chapin, M., 133
Chapman, P. J., 381
Charalampous, F., 327, 338
Chardonnet, Y., 127
Chargaff, E., 30, 47, 48, 52, 53, 230, 235, 491
Charlson, A. J., 172
Charlwood, P. A., 304, 599
Charney, J., 133
Chase, M., 43
Chatagner, F., 411
Chatterjee, I. B., 345
Cheer, S., 495
Cheldelin, V. H., 216, 424, 447
Chen, I.-W., 335
Chen, P. T., 172
Chen, P. Y., 583
Cheng, C. C., 474
Cheng, T. Y., 30, 48, 50, 51, 342, 344, 649
Cheniae, G. M., 226
Chen Lin, Y., 502
Chen-Lu, T., 286
Chernick, S. S., 692
Chernoff, A. I., 305, 311, 314
Chesire, S. D., 711
Cheville, N. F., 469
Chi, Y.-M., 331
Chiang, Y., 655
Chibata, I., 367, 370
Chidester, J., 120, 727, 732
Chiga, M., 646
Child, W. C., 652
Childs, C. R., 777
Chilton, W. S., 156
Chilwell, E. D., 739
Chirigos, M. A., 188
Chisholm, M. J., 723
Chopin, J., 167
Choppin, P. W., 133
Chow, D. C., 332
Chow, Y.-L., 643
Christ, E. J., 254
Christensen, H. N., 364, 527, 553, 561, 563, 569, 570, 690, 691
Christman, D. R., 412, 444
Christophe, J., 722
Chu, M. Y., 124, 173
Chü, N.-J., 173
Chun, E. H. L., 64
Churchill, J. W., 656
Ciardi, J. E., 489
Ciganek, E., 775
Čihák, A., 484
Ciotto, M. M., 598, 622, 681
Cirillo, V. P., 567, 568
Cittadini, D., 373
Civen, M., 698, 699
Clagett, W. R., 734
Clague, M. E., 340
Clamp, J. R., 155
Clancy, M. J., 161, 174
Clark, B., 243, 564
Clark, D. E., 643
Clark, J. R., 520, 521, 532
Clark, R. K., Jr., 158
Clark, S. L., Jr., 555
Clark, V. M., 173, 653
Clarke, D., 359
Clauser, H., 347
Clayton, R. B., 734, 745
Clegg, M. D., 302
Clement, G., 242, 721
Clementi, F., 514, 524
Clemons, C. A., 737
Cleveland, P. D., 333
Clever, V., 697
Clifford, J., 364
Clodfelder, P., 627
Clow, J. E., 520, 521
Clowes, R. C., 442
Coates, J. H., 57
Cobain, W. A., 275
Cochran, G. W., 120
Cocito, C., 30, 99, 103, 134
Cockran, D. G., 590
Coddington, A., 476
Codington, J. F., 165
Coffman, J. R., 726
Cohen, B. L., 572
Cohen, E. H., 694
Cohen, G., 343, 367, 570, 571
Cohen, H., 649
Cohen, J. A., 44, 88, 91, 96, 102, 647
Cohen, L., 290, 465
Cohen, M. M., 358
Cohen, P., 357, 371, 484, 485, 541, 700
Cohen, R., 734
Cohen, S. S., 83-154; 63, 90, 98, 99, 102, 105, 106, 107, 108, 109, 110, 111, 121, 122, 191, 192, 201, 202, 205, 206, 475, 488, 489
Cohn, W. W., 33
Cohn, Z. A., 122
Colajacomo, A., 342
Cole, A., 535
Cole, D. D., 727
Cole, L. J., 51
Coleman, L., 43, 113
Coleman, R., 243, 563
Coleman, W. H., 368
Coles, N. W., 359
Coles, W. C., 647
Coletta, M., 407, 409
Colhoun, E. H., 661
Collins, F. D., 216
Colodzin, M., 263

Colon, J. L., 122
Colowick, S. P., 414, 606, 681
Colpa-Boonstra, J. P., 583, 590, 591
Colter, J. S., 44, 131, 132
Colvin, J. R., 333
Commoner, B., 538, 541, 606
Condie, R. M., 469
Condit, P. T., 480
Coniglio, J. G., 256
Conn, E. E., 381, 683
Connelly, C. M., 29
Conney, A. H., 345
Connolly, J. H., 129
Connors, K. A., 654
Conover, T. E., 591, 610
Conrad, H., 587
Conroy, H., 155
Consigli, R. A., 122
Contaxis, C. C., 734
Contrera, J. F., 383
Conway, E. J., 558
Cook, S., 731
Cooke, J., 286, 289, 405
Cooke, W. D., 711
Cooksey, K. E., 221, 366
Coombs, T. L., 624
Coon, E., 262
Coon, M. J., 420, 421, 628
Cooney, W. J., 497
Cooper, J. A., 734
Cooper, P. D., 89, 121, 133, 134
Coote, J. L., 132
Cope, A. C., 775
Copeland, V., 466, 468, 470, 473
Coppo, A., 118
Coram, E. H., 232
Corbett, M. K., 87
Corbett, N. M., 160
Corbett, W. M., 161, 174
Corcoran, B. J., 384
Corcoran, J. W., 452
Cordes, E. H., 647, 648, 654, 666, 668
Cordes, S., 48, 118
Cordner, J. P., 655
Cordonnier, J. K., 311, 312
Corey, E. J., 157, 290
Corey, R. B., 271, 276
Cori, C. F., 331
Cormick, J., 303, 305, 306, 307, 315
Cornforth, J. W., 725, 777
Cornforth, R. H., 725, 777
Cornwell, D. G., 243
Corse, J., 716
Corwin, A. H., 741
Cory, J. G., 383
Coscia, C. J., 738
Costa, E., 545
Cosulich, D. B., 494, 497
Coulson, D. M., 739
Coultas, M. K., 471
Countryman, J. L., 50
Coussin, B. R., 723
Coutsogeorgopoulos, C., 26, 168
Cowan, J. C., 722
Cowan, K. W., 137
Cowger, M. L., 591
Cowie, D. B., 21
Cowley, I. J., 678
Cox, D. J., 293
Cox, E. C., 499, 501
Cox, J. R., Jr., 658
Cox, R. A., 500
Coxon, B., 163, 169
Craft, M., 539
Craig, B. M., 216, 716
Craig, J. C., 652
Craig, L., 305
Cram, D. J., 657
Cramer, F., 173, 644
Cramer, J. W., 486, 492
Cramer, R., 87, 130
Crane, E. E., 558
Crane, F. L., 681, 616
Crane, R. K., 553, 554, 567, 568, 569, 570
Craseman, J. M., 70, 72, 73, 492
Crawford, E. J., 186, 187, 188, 189, 201, 206, 520
Crawford, E. M., 130
Crawford, I., 376, 377
Crawford, L. V., 48, 130
Crawford, R. M. M., 590
Crayton, F., 737
Creech, B. G., 715, 717, 733, 734
Creese, R., 557
Cremona, T., 613, 614
Crespi, H. L., 58
Cresson, E. L., 455
Cresswell, R. M., 428
Creveling, C. R., 384
Crews, O. P., Jr., 166
Crick, F. H. C., 43, 54, 63, 67, 68, 69, 92, 95, 491
Criddle, R. G., 583
Cropper, F. R., 655
Crosbie, G. W., 363
Crosbie, G. W., 211
Crowe, P. F., 716
Crowell, E. A., 724
Crowell, T. I., 648
Crowther, D., 134
Cruickshand, J. G., 137
Crump, G. B., 736
Cua, J. T., 303
Cullen, W. P., 497
Cullis, A. F., 274, 281, 308, 310, 315
Cumings, J. N., 230, 232
Cummings, D. J., 96, 466, 493
Cummings, J. T., 565
Cummins, J., 523, 524, 526, 528, 540
Cunningham, L. W., 627
Curdel, A., 613, 614
Curran, J., 356, 625, 626, 684, 687
Curran, P., 561
Curry, D. M., 702
Curtis, E. J. C., 164, 174
Curtis, P. J., 473
Curzon, G., 232
Cutolo, E., 612
Czaky, T. Z., 568

D

D'Adamo, A. F., 444
Daems, W. T., 88, 96, 102
Daesch, G. E., 126
daFonseca-Wollheim, F., 342
Dagley, S., 22, 362, 381, 464
Dahl, J. L., 464, 465, 468, 469, 472, 473, 474, 485, 488
Dahms, G., 435, 436, 437
Daigo, K., 650
Dakshinamurti, K., 335
Dalen, A. B., 467, 475
Dales, S., 122, 123, 124, 126, 136
Dal Nogare, S., 717
Dalziel, K., 598, 619, 620, 621, 622, 623
Dam, H., 262
Dan, K., 414
Dance, N., 303, 304, 311
Danegan, L., 739
Danford, M. D., 534
Danforth, W. H., 331
Danielli, J. F., 554, 556
Daniels, E. E., 171
Daniels, J. R., 690
Danielson, L., 591, 610
Danielsson, H., 734
Danowski, T. S., 557
Danyi, M. D., 738
Darley, E. F., 737
Darlington, R. W., 48, 124
Darnell, J. E., Jr., 133, 134, 135, 500
Darwish, D., 655
Das, H. K., 358
Das, M. L., 590, 650
da Silva Pereira, A., 48
Dässler, C.-G., 174
Datta, A., 344, 661
Dauchy, S., 722
Daughaday, W. H., 375
Davenport, F. M., 138
Davenport, G. R., 74
Davenport, H. E., 618
David, S., 442
Davidoff, F., 261
Davidson, D., 663
Davidson, E., 279, 322, 328, 342, 478
Davidson, J. D., 466, 467,

469, 471, 473, 474
Davidson, N., 56, 59
Davies, D. A. L., 321
Davies, D. D., 629
Davies, D. R., 269, 308
Davies, G. H., 472
Davies, R. E., 554, 557, 558, 559
Davies, S. P., 138
Davis, A. M., 384
Davis, B. D., 207, 501, 570
Davis, F. F., 35, 37
Davis, G. T., 654
Davis, J. E., 114
Davis, J. M., 489
Davis, L., 365
Davis, R., 371, 372
Davis, T. W. M., 741
Davison, A. N., 226
Davison, P. F., 18, 45, 46, 47, 57, 58, 59, 61, 90, 98
Dawson, H. M., 655
Dawson, R. F., 444
Dawson, R. M. C., 155, 216, 217, 237, 338
Day, A. J., 264
Day, J., 402
Day, R. A., 193, 291, 476
Dayton, P. G., 162
De, P. K., 294
Deal, C. H., 713
Deatherage, F. E., 644
Debavadi, C. S., 466, 467, 471, 475
de Belder, A. N., 162
De Bodo, R. C., 247
DeBoer, C., 494
Debons, A. F., 347, 413
DeBrignone, C. C., 678
Decker, R. H., 380, 443, 444
DeDeken, R. H., 372
DeDeken-Grenson, M., 372
Dedichen, J., 140
deDuve, C., 690
de Fekete, M. A. R., 333
Deffner, G. G. J., 767, 768
De Flora, A., 344, 629
de Geir, J., 216, 217, 219
Degerstedt, G., 481, 485
DeGiovanni, R., 70
DeGroot, L. J., 384
Degroot, N., 357
Dehlgard, M., 173
Deitrich, R. A., 628
De Jarnette, F. E., 277
Dekker, C. A., 34, 119, 476
Dekker, E. E., 376
de Klerk, H., 592
deKloet, S. R., 31, 32, 50
de la Burde, B., 737
De la Fuente, G., 335
De la Haba, C., 331, 378, 499, 500
Delamore, I. W., 490, 492
De la More, P. B. D., 651
Delbruck, M., 71
Delihas, N., 109
Della Pietra, G., 373
Delluva, A. M., 554
Dellweg, H., 71, 91, 492
Delmonte, L., 185, 188, 479
De Loecker, W., 641
DeLorenzo, F., 373
de Lozé, C., 271, 277, 294, 658
DeLuca, C., 429
Demailly, J., 17
DeMarco, C., 407, 409, 410, 422
DeMars, R. I., 73
Demek, M. M., 656
Demerec, M., 442
Demmig, W., 159
Demole, E., 730
DeMoss, J. A., 377
Den, H., 421
Dendy, P., 127
Denes, G., 101, 358
Dengler, H. J., 389
Denison, F. W., Jr., 368
Dennis, W. H., 558
Depue, R. H., 360
Derevitskaya, V. A., 171
Der-Fen, S., 464
De Robertis, E., 517, 522
DeRobichon-Szulmajster, H., 367
Desnuelle, P., 242
De Somer, P., 30, 134
de Terra, N., 327
De Tomas, M. E., 255
Deuel, H., 155, 157
Deul, D. H., 529, 559, 583
Deulofeu, V., 172
Deutsch, J. F., 45
Devine, L. F., 138
Devlin, T. M., 339, 591
DeVoe, H., 56
DeVoe, S. E., 477
Devreux, S., 464, 466
DeVries, J. E., 739
Dewey, V. C., 437, 468, 475
Dewolf, S., 109, 202
Deyrup, I. J., 554, 557
Dhaluval, A. S., 120
Dhar, M. L., 773
Dhopeshwarkar, G. A., 242, 262, 263, 730
Dialamer, G. H., 381
Diamantis, A. A., 385, 650
Diamantstein, T., 362
Diamond, L., 134
Diamondstone, T. I., 386
Dickerson, R. E., 269, 276, 307, 308, 310, 314
Dickey, F. H., 645
Dickman, S. R., 158
Dickstein, S., 611
Didio, J., 533
Dieckmann, M., 21
Diehl, H. W., 160
Diener, T. O., 119
Dierickx, L., 115
Dietrich, L. S., 468, 678
Dietz, A., 494
Dikmak, E., 336
Dillmann, A., 387
Dils, R. R., 220, 221
Di Luzio, N. R., 249
Dimant, E., 346
Di Marco, A., 452, 453
DiMayorca, G. A., 43, 44, 129
Dimick, K. P., 741
DiMilo, A. J., 655
Dingle, J., 690
Dinh-Nguyen, N., 762
Diniz, C. R., 696
Dinning, J. S., 198, 373
Dintzis, H. M., 274, 308
Dion, H. W., 156, 171, 172
Dipietro, D. L., 341
Di Prima, A., 725
Di Prisco, G., 380, 443
Diringer, R., 271
Dirksen, M. L., 107, 112, 192, 202
DiSabato, G., 654
Disraely, M. N., 172, 337, 432
Distler, J. J., 173
Ditcher, W., 290
Dittmer, J. C., 215, 237
Dittmer, K., 455, 456
Dixon, G., 475, 606
Dixon, M., 126, 580, 598, 665, 687
Djerassi, C., 293, 762, 763
Djordjevic, B., 64, 70, 492, 493
Dmochowski, L., 493
Dobbing, J., 543
Dobrovolskaia, G. N., 128
Doctor, B. P., 29, 36
Dodd, M. C., 527
Dodgson, K. S., 155, 174, 364
Dodson, A. S., 502
Dodson, R. G., 341, 342
Doeg, K. A., 581, 583
Doerfler, W., 17
Doery, H. M., 527
Doetsch, R. N., 369
Doherty, D. G., 597, 598
Dohlman, G. F., 514, 524
Doi, R. H., 114
Dolbeare, F., 100
Dole, V. P., 246, 718
Donaldson, K. O., 198, 199, 200, 201, 207, 210
Donath, W. E., 156
Donbrow, M., 642
Dondon, J., 490
Donini, P., 118
Donohue, D. M., 193
Donohue, D. R., 188
Donovan, E., 201, 206
Dorfman, A., 328

Dorfman, R., 677, 698
Dörrscheidt, W., 738
Doscher, M., 281
Doskocil, J., 52
Doty, P., 22, 31, 47, 48, 49, 52, 53, 54, 55, 56, 57, 60, 61, 62, 70, 71, 72, 91, 100, 271, 278, 293, 294
Doublas, D. E., 248
Doudoroff, M., 661
Dougherty, R. M., 130, 215
Doughty, C. C., 102
Douglas, H. C., 337
Douglas, T., 155, 174
Dounce, A. L., 46, 57, 61, 63
Dourmashkin, R. R., 130, 215
Dove, W. F., 59
Dovedova, E. L., 518, 524
Downes, C. M., 122
Downing, D. T., 723, 725, 732
Downing, S. J., 570
Downman, C. B. B., 557
Doyle, F. R., 493
Doyle, J., 140, 493
Doyle, R. F., 140
Doyle, W. P., 343
Dozy, A. M., 302, 303
Drahovsky, D., 481
Drain, D. J., 389
Drayton, H. A., 130
Drechsler, E. R., 342
Dreisbach, L., 723
Dressler, F., 776
Dreyer, W. J., 101, 111, 290, 491
Dreyfus, P. M., 532
Driscoll, C. A., 455, 456
Driscoll, J. L., 740
Drummond, G. I., 173, 175, 251
Drury, D. R., 569
Drysdale, G. R., 614
Dubach, P., 155
Dubbs, D. R., 124, 487, 489, 496
Dubes, G. R., 133
Dubin, D. T., 97, 501
Dubowitz, V., 342
Dudek, G. O., 656
Duerksen, J. D., 21
Duffy, P. E., 136
Duggan, E. L., 57
Dukes, P. P., 97
Dulaney, E. L., 493, 494
Dulbecco, R., 129, 130, 487
Dulmadge, E. A., 475
Dumont, A. E., 249
Dumville, G., 358
Duncan, B., 475
Duncan, H., 604
Dunham, E. T., 554, 559
Dunlap, A. K., 287
Dunn, A., 247
Dunn, D. B., 206
Dunstone, E. A., 726
Dunwell, J. L., 327
Dupont-Mairesse, N., 119
Durham, L., 156, 171
Durr, I. F., 628
Duschinsky, R., 160, 165
Dussoix, D., 118
Dutcher, J. D., 169
Dutton, G. G. S., 174
Dutton, G. J., 345
Dutton, H. J., 228, 718
Dutton, J. V., 334
Du Vigneaud, V., 455, 456
Duynstee, E. F. J., 643
Dyer, J. R., 171

E

Eagle, H., 121, 134
Eagon, R. G., 339, 344
Eakin, E. A., 455
Eakin, R. E., 455
Earl, J. M., 421
Earle, J., 70
Earle, M. J., 247
Easterbrook, K. B., 122, 126
Eaton, M. D., 131
Eaton, N. R., 332
Eaton, P., 247
Ebaugh, F. G., Jr., 314
Ebel, J. P., 30
Eberhagen, D., 722
Eberhart, B. M., 440
Ebert, P. S., 375
Eberts, F. S., Jr., 473
Ebisuzaki, K., 191
Eble, T. E., 494
Eboué, D., 347
Eckstein, F., 161
Eddy, B. E., 43, 44, 129
Eddy, N. B., 737
Edelhoch, H., 294
Edelman, I. S., 527, 553
Edelman, J. C., 366
Edgar, R. S., 90
Edgington, D. N., 651
Edman, P., 289
Edmonds, M., 23, 25
Edmonson, J. H., 248
Edmundson, A. B., 269, 288, 307
Edsall, J. T., 282, 668
Edson, N. L., 337
Edström, A., 523
Edström, J.-E., 522, 523
Edwards, C., 543, 559
Edwards, G. J., 726
Edwards, J. O., 647
Edwards, P. A., 111
Efron, M., 311, 312, 314
Egami, F., 34, 35, 594
Egdahl, R. H., 469
Egge, H., 526, 527
Eggerer, H., 648
Eggers, H. J., 134, 140
Eggerton, F. V., 155
Eggleston, L. V., 557, 588
Eglinton, G., 711, 732
Egyházi, E., 524
Ehrenberg, A., 585, 587, 603, 623
Ehrengeld, E. R., 478
Ehrlich, P., 56
Eichel, H. J., 611
Eichhorn, G., 56, 295, 387
Eichner, D., 523
Eidelberg, E., 515
Eidelman, M., 739
Eidinoff, M. L., 130, 466, 467, 470, 487
Eigner, J., 22, 61, 62, 88
Einstein, J. R., 277, 279
Eirich, F., 305
Eisenberg, E., 677
Eisenberg, M. A., 456
Eisenman, G., 561
Eisenstadt, J. M., 17
Eisenstark, A., 113
Eisenstein, A. B., 332
Elbein, A. D., 172, 322, 325
Elder, T. D., 686
Eldjarn, L., 404
Eldsen, D. F., 157
Eley, D. D., 282, 528, 539
Elford, H. L., 456
Elion, G. B., 468, 472
El Khadem, H., 158
Elko, E. E., 249
Ellem, K. A. O., 44, 131, 132
Ellin, R. I., 717
Elliot, D. C., 155
Elliot, W. H., 155, 369
Elliott, A., 55
Elliott, K. A. C., 557
Elliott, L. E., 716
Ellis, D. B., 472
Ellis, R. B., 237
Ellman, G. L., 405
Elmore, D. T., 289
Elödi, P., 660, 661
Elsbach, P., 557
Elson, E. L., 668
Elvehjem, C. A., 443
Elwood, J. C., 502
Emerique-Blum, L., 43, 113, 114
Emery, E., 262, 729
Emmelot, P., 340, 559
Endahl, B. R., 678
Endahl, G. L., 626
Endecott, B., 337
Enders, J. F., 89, 129
Eneroth, P., 734
Engel, L. L., 680
Engelberg, H., 244
Englander, S. W., 119
Englard, S., 429, 597, 606, 610
Engle, R. L., Jr., 302

Engström, A., 522
Engström, L., 648
Ennis, H. L., 483
Entenman, C., 245
Entressangles, B., 242
Enzell, C., 738, 764
Ephrussi-Taylor, H., 52, 54
Epstein, C., 286, 406
Epstein, E., 554
Epstein, H., 48, 117, 118
Epstein, J., 656
Epstein, M. A., 127
Epstein, R. H., 112, 192, 202
Erbland, J., 222
Erdos, T., 501
Erdtman, H., 731, 764
Erikson, R. L., 492
Erlander, S. R., 292
Erlanger, B. F., 63
Ernst, E., 554
Ernster, L., 588, 589, 591, 610
Erway, W. F., 677
Erwin, J., 261
Erwin, M. J., 470
Espada, J., 323, 333
Esposito, R. G., 436
Estabrook, R. W., 591
Estes, H. E., Jr., 251
Estramareix, B., 442
Etingof, R. N., 420
Ettre, L. S., 737
Eubank, L. H., 558
Evans, C. A., 43, 44
Evans, E. A., Jr., 43, 44, 113, 117, 119, 147
Evans, J. S., 494
Evans, J. V., 572
Evans, M. L., 559
Evans, M. W., 282
Evans, R. M., 729
Evans, W. H., 343
Eydt, K. M., 520, 521
Eyerman, G. S., 520, 521
Eylar, E. H., 272
Eyring, H., 659

F

Fahrenbach, M. J., 206
Faillace, L. A., 233
Fain, J. N., 692
Falcone, A. B., 662
Falcone, G., 405
Fales, H. M., 718, 728, 734, 737, 741, 743
Falk, M., 535
Falkow, S., 47, 49
Fallon, H. J., 481, 482, 483
Fanshier, D. W., 408, 411
Fantes, K. H., 133
Farah, A., 412
Farber, E., 73, 74, 699
Farber, S., 19, 497
Farkas, I., 161
Farkas, J., 473
Farkas, T., 262
Farkas, W., 616
Farkashidy, J., 514, 524
Farmilo, C. G., 741
Farnham, A. E., 137
Farquhar, J. W., 219, 226, 727
Farr, L. A., 520
Farthing, C. P., 126
Fasella, P., 385, 649
Fasman, G. D., 271
Faulkner, P., 128, 132
Favelukes, S., 500
Fawcett, C. P., 622
Fawzy, H., 444
Fazekas, J. F., 545
Feather, M. S., 175
Fecher, R., 165
Feeley, G., 601
Feigelson, M., 693, 696, 700
Feigelson, P., 378, 443, 473, 474, 693, 696, 699, 700
Feingold, D. S., 321, 346, 501
Feist, E., 369
Feldhoff, M., 161
Feldman, D., 583
Feller, D. D., 369
Felsenfeld, G., 56, 59
Felsenfeld, H., 337
Felt, V., 248
Felton, S. P., 580
Felts, J. M., 244, 245, 264
Fenn, R. H., 276
Fenn, W. O., 554
Fenninger, W. D., 303
Ferguson, J. J., Jr., 500
Fermi, G., 64, 95, 103
Fernald, G. W., 568
Fernández-Morán, H., 537, 539, 543
Ferrari, R. A., 226
Ferrier, R. J., 157, 338, 735
Ferro-Luzzi, G., 422
Ferroluzzi-Ames, G., 479
Fessas, P., 312
Fessler, L. I., 106
Feughelman, M., 55
Fewson, C. A., 592, 594
Fidge, N. H., 264
Field, E. O., 304
Field, G. F., 759
Field, J. B., 332
Fiers, W., 55
Fiess, H. A., 664
Fife, T. H., 641, 647, 655, 657
Figard, P. H., 363
Figueroa, E., 332
Fillios, L. C., 107
Finan, P. A., 771
Fincham, J. R. S., 18, 660
Finkel, M., 244
Finkelstein, M., 113, 657
Fischer, E. H., 331, 385, 649
Fischer, G. A., 124, 188, 480, 482, 488, 489, 498
Fischer, H. O. L., 156, 169, 170, 175
Fish, D. T., 120
Fisher, E., Jr., 127, 653
Fisher, H., 73, 263
Fisher, H. F., 356, 625
Fisher, H. K., 521
Fisher, J. M., 500, 501
Fisher, R. B., 347
Fisher, T. M., 50
Fisher, T. N., 21, 32, 127
Fishman, J., 734
Fishman, W., 698
Fishman, W. H., 172
Fitch, C. D., 373
Fitches, H. J., 763
Fitt, E., 45
Fitts, D. D., 538
Fitz-George, R. B., 338
Fjelde, A., 475
Flaks, J. G., 108, 109, 191, 192, 201, 202, 470, 499, 501, 205
Flanagan, J. F., 126, 487
Flavin, M., 399, 408, 410, 657
Fleischer, B., 516
Fleischer, S., 218, 516, 537, 581
Fleischman, J. B., 98
Fleisher, G. A., 385
Fleissner, E., 23, 207
Fletcher, A. M., 436
Fletcher, H. G., Jr., 160, 161, 162, 163, 167, 173
Fletcher, M. J., 400
Flexner, L. B., 558
Fliese, R. J., 727
Fling, M., 382
Flitter, D., 287
Flora, R. M., 386, 700
Flowers, H. M., 227
Fluck, A. A. J., 726
Fluharty, A. L., 400, 415, 589
Flynn, F. V., 556
Folk, J. E., 290
Folkers, K., 140, 172, 494, 581
Fölsch, G., 769
Folsome, C. E., 92
Foltz, C. M., 290
Fomina, M. P., 341
Fong, C. T. O., 347, 412, 413
Fontaine, F., 47
Fontan, C. R., 728, 739
Fontell, K., 723
Ford, I. A. M., 663

Ford, T., 216, 217, 230
Forist, A. A., 649
Fornasari, E., 581
Forrest, H. S., 435, 437
Forsander, O., 441
Forss, D. A., 726
Forsthoff, L., 161
Foster, A. B., 155, 156, 158, 159, 171, 172
Foster, D. W., 339, 734
Foster, J. F., 294
Foster, M. A., 208, 210
Foster, R. J., 333
Fostiropoulos, G., 312
Foudy, T. P., 606
Fowler, L. R., 581, 679
Fowler, R. H., 283
Fox, A. S., 382
Fox, C. L., 194
Fox, E., 70, 72, 73, 492
Fox, J. J., 160, 165, 167
Fox, M., 206, 290
Fox, A., 692
Fraenkel-Conrat, H., 37, 119, 120
Frampton, E. W., 344
Franc, J., 407
Francki, R. I. B., 484, 485
Frank, H., 137
Frank, H. P., 644
Frank, H. S., 282, 534
Frank, I. F., 663
Franke, W., 366, 387
Frankel, F., 98
Franklin, N. C., 95, 116
Franklin, R. E., 43, 54
Franklin, R. M., 19, 21, 50, 51, 73, 132, 133, 136, 494, 495, 496, 497, 498, 499, 696
Frantz, I. D., 734
Franz, J. M., 692, 699
Franzen, J. S., 284
Fraser, D., 97, 103, 106, 110
Fraser, J. R. E., 244
Fraser, P. E., 408
Fraser, R. R., 156, 157
Fraser, R. T. M., 653
Fraser-Reid, B., 159
Fray, G. I., 644
Frederick, E. W., 481
Fredericks, D. H., 711
Fredericks, J., 629
Fredericq, E., 47
Fredrickson, D. S., 245, 247
Freed, R., 28
Freedland, R. A., 336, 373, 380
Freeman, G., 487
Freeman, N. K., 138, 216
Freer, S. T., 276, 281
Freese, E., 48, 67, 68, 93, 94, 95, 475, 490
Frei, E. III, 470, 481, 482, 483
Freidberg, S. L., 331
Freifelder, D., 45, 46, 57, 58, 59, 61, 98
Freinkel, N., 338
Freireich, E. J., 481, 483
French, J. C., 171
Fresco, J. R., 464
Freud, S., 542
Freundlich, M., 370
Frick, G., 51, 95, 97, 98
Fridovich, I., 602, 604, 616, 649
Friedberg, S. J., 251
Friede, R. L., 523, 525, 543
Frieden, C., 355, 356, 357, 625, 626, 661, 683
Frieden, E., 383, 693, 694
Friedkin, M., 185-214; 23, 32, 186, 187, 188, 189, 192, 199, 201, 202, 203, 204, 205, 206, 433, 474, 479, 480
Friedland, S. S., 762
Friedman, D. L., 329
Friedman, L., 288
Friedman, S., 208, 209, 210
Friedmann, H., 453, 615
Friedrich, K., 738
Friend, C., 43, 44, 129
Friesen, B. S., 119
Friis, J., 335
Frisch, A. W., 472
Frisell, W. H., 616
Fromageot, P., 411
Fromm, H. J., 338, 619, 620
Frommhagen, L. H., 137, 138
Frontali, C., 118
Frowein, A., 174
Fruton, J. S., 662
Fryer, F. H., 736
Fujii, S., 662
Fujimoto, A., 335
Fujimoto, D., 375, 403
Fujimoto, Y., 120
Fujino, Y., 227, 364
Fujioka, H., 294
Fujisawa, H., 560, 564
Fujita, A., 646
Fujita, C., 365
Fujita, H., 292, 499
Fujita, T., 438, 594
Fukai, K., 137
Fukasawa, T., 324
Fukuda, S., 115, 156, 158
Fukuhara, H., 17
Fulco, A. J., 255, 260
Fuller, W., 26
Fullerton, P. M., 555
Fulmor, W., 494, 497
Fulton, R. W., 88
Fuoco, L., 452
Furman, R. H., 244
Furness, G., 122
Furter, H., 172
Furth, J. J., 16, 17, 19, 20, 21, 50, 73, 104, 106, 107, 497, 498, 499, 696
Furukawa, T., 724
Futterman, S., 186, 204

G

Gable, C. M., 287
Gabriel, O., 322, 323, 328
Gabrio, B. W., 188
Gadebusch, H. H., 155
Gaetani, S., 486
Gaetjens, E., 640, 641
Gafford, L. G., 48, 124
Gaiser, P., 454
Gaito, R. A., 485
Gajewska, E., 57, 60, 70, 71, 72, 91
Galambos, R., 523
Gale, P. H., 581
Galegov, G. A., 385
Gallagher, C. H., 677
Gallagher, T. F., 734
Gallay, L. R., 722
Gallop, P. M., 652
Galloway, B., 322, 326, 334
Galmarini, O. L., 172
Gammack, D. B., 311
Ganguli, N. C., 332, 362
Ganguly, J., 243
Ganrot, P. O., 389
Gapp, F., 765, 767, 770, 771
Gard, S., 89
Gardiner, R. C., 195
Gardos, G., 554, 557, 558
Garegg, P., 175
Garen, A., 24, 34, 92, 101
Garfinkel, E., 477
Garner, H. R., 172
Garner, R. L., 35
Garrett, E. R., 641
Gascoigne, J. A., 155
Gascoigne, M. M., 155
Gasland, S., 764
Gatt, S., 526
Gauhe, A., 526, 527
Gaull, G., 681
Gavasto, F., 702
Gavrilova, L. P., 119
Gawron, O., 606
Gaziev, G. A., 718
Gee, M., 735
Gehring-Müller, G., 306, 307
Gehrke, C. W., 721
Geiduschek, E. P., 16, 17, 47, 51, 56, 57, 58, 59, 60, 62, 68, 104
Geiger, A., 513
Geiger, W. B., 291
Gellerman, J. L., 716
Gelles, E., 642
Gellhorn, A., 249, 256

Gelmer, T. E., Jr., 558
Genin, C., 17
Georgatsos, J. G., 34
George, W., 737
Georgiev, G. P., 31, 32, 44, 50
Gerald, P. S., 303, 311, 312, 314
Gerard, R. W., 559
Gerber, G., 373
Gerbert, P., 43, 44, 129
Gergely, J., 283
Gerhart, J. C., 689
Gerone, P. J., 469
Gershenson, S., 128
Getz, G. S., 216, 218
Gey, K. F., 389
Geyer, V. B., 527
Ghirardelli, R. G., 657
Ghiretti, F., 593
Ghiretti-Magaldi, A., 613, 614
Ghiron, C. A., 657
Gholson, R. K., 378
Ghosh, A., 327
Ghosh, N. C., 345
Ghosh, S., 337, 478
Giacobini, E., 521, 522
Giacomoni, D., 695
Giartosio, A., 649
Gibbons, N. E., 216, 224, 225
Gibbs, M., 363
Gibian, H., 155
Gibson, B. W., 130
Gibson, J., 593
Gibson, K. D., 365, 367
Gibson, Q. H., 599, 608, 609, 616
Giddings, J. C., 293
Giebisch, G., 554
Gielen, E., 232, 233
Gierer, A., 119
Giesecke, W., 729
Gigg, R., 171
Gilbert, D. L., 554
Gilbert, G. A., 293, 331
Gilbert, W., 21, 22, 32, 50, 486
Gilbert, W. R., Jr., 465, 469
Gilchrist, M., 647, 652
Giles, W. G., 471
Gilham, P. T., 30, 34
Gill, J. W., 365
Gillam, I. C., 162, 174
Gillis, B. T., 775
Gilmour, D., 659
Gilvarg, C., 366, 367
Ginoza, H. S., 420
Ginsberg, F., 471
Ginsberg, H., 126, 487
Ginsburg, V., 321, 322, 325, 339
Girgis, W., 158
Giri, K. V., 429
Gitler, C., 378, 443
Gitterman, C. O., 493, 494
Giuditta, A., 610
Giuffrida, L., 718
Glaid, A. J., 606
Glansdorff, N., 371
Glantz, R. R., 657
Glascoe, P. K., 657
Glaser, L., 322, 324, 326, 337
Glasky, A. J., 589
Glazer, A. N., 288
Glazer, Z. T., 170
Glenner, G. G., 290
Glick, M. C., 335
Glynn, I. M., 529, 554, 556, 559, 560, 564
Gnuchev, N. V., 388
Godin, P. J., 739
Godman, G. C., 136
Goebel, W. F., 102, 103
Goedde, H. W., 342, 590
Goetsch, G. D., 721
Goetz, O., 137
Göggel, K. H., 590
Gohlke, R. S., 756
Golab, T., 160
Golberg, L., 336
Gold, A. H., 121
Gold, A. M., 292
Gold, M., 246, 248
Gold, P., 381
Gold, V., 655
Goldacre, R. J., 563
Goldberg, H., 468
Goldberg, I. H., 20, 21, 23, 73, 226, 324, 495
Goldberg, N. D., 488
Goldberger, R., 286, 406, 583
Golde, A., 130
Goldemberg, S. H., 329
Golden, J., 469
Goldfien, A., 245, 246
Goldfine, H., 221, 255, 259, 260
Goldin, A., 186, 188, 206, 470, 480
Goldman, D., 594
Goldman, H. I., 316
Goldman, P., 252, 257, 264
Goldmann, M., 16, 104
Goldring, S., 534
Goldschmid, H. R., 159, 161
Goldschmidt, S., 663
Goldstein, D. A., 95
Goldstein, I. J., 158
Goldstein, J., 157, 315
Goldstein, L., 362, 365, 378, 386, 699, 701
Goldstein, M., 383
Goldstein, M. N., 19, 497
Goldstein, M. S., 569
Gollub, E. G., 474
Gomatos, P. J., 136
Gomirato, G., 524
Gonda, O., 566, 569
Gonzales, A. G., 732
Good, R. A., 469
Goodman, D. S., 725, 777
Goodman, H. M., 247, 248
Goodman, L., 156, 165, 166, 167, 170, 171, 174
Goodman, M., 294
Goodno, J. A., 734
Goodwin, F., 380, 686
Goodwin, H., 232
Goodwin, T. W., 426, 428
Gopal, K., 514, 524
Gordon, C. N., 494
Gordon, G. S., 677
Gordon, J., 58, 140
Gordon, M. P., 37, 120, 121
Gordon, R. S., 245, 247, 262
Gordon, S., 250
Gore, M. B. R., 681
Gorin, G., 668
Gorin, P. A. J., 163, 164, 736
Gorini, L., 371
Gorman, J. G., 343
Gorman, M., 502
Gorski, J., 500, 691, 697
Goryachenkova, E. V., 411
Gossling, R. G., 43, 54
Goto, M., 437
Gots, J. S., 466, 474, 475
Gottesman, M. E., 26
Gottlieb, O. R., 730
Gotto, A. M., 628
Gottschalk, A., 101, 138
Gottschling, H., 95, 475
Gounaris, A. D., 607
Grachev, M. A., 324
Grado, I., 370
Graf, L., 230
Grampp, W., 522
Granados, R., 167
Granick, S., 363
Grant, N. H., 643
Grant, P. T., 616
Grassmann, W., 663
Gratzer, W. B., 271, 278, 293, 302, 316
Graves, D. J., 358
Gray, G. M., 216, 217, 225, 722, 727
Gray, J. E., 494
Gray, S. J., 314
Grazi, E., 342, 344, 629, 649
Graziosi, F., 118
Green, D., 93
Green, D. E., 400, 537, 582, 583, 604, 629, 679
Green, D. M., 31, 52, 54
Green, D. W., 274, 278, 280, 308
Green, H., 570
Green, J. R., 409, 651
Green, L. F., 407
Green, M., 48, 50, 124,

125, 126, 647
Greenberg, D. M., 186, 187, 196, 201, 202, 204, 221, 363, 365, 366, 411, 628
Greenberg, G. R., 109, 110, 191, 196, 202
Greenberg, H., 648
Greenberg, J., 665
Greenberg, L. D., 256
Greengard, O., 378, 443, 499, 500, 693, 696, 699, 700
Greer, S., 68, 70, 492
Gregg, C. T., 590
Gregolin, C., 583, 612, 613, 614
Gregory, J. D., 399
Gregory, M. E., 448
Gregusova, V., 481
Greig, C. G., 163, 171
Greull, G., 344, 650
Greville, G. D., 357, 611, 626
Grey, C. E., 493
Grice, M., 290
Griffin, A. C., 500
Griffith, M., 363
Griffith, T., 444
Griffiths, D. E., 581, 583, 584, 585, 586, 679
Griffiths, J. M., 469
Griffiths, S. B., 316
Grimm, F. C., 597, 598
Grisaro, V., 662
Grisolia, S., 360, 370, 371, 372, 661
Groenewoud, G., 328
Groman, N. B., 115
Gros, F., 18, 21, 22, 32, 50, 486, 487
Gross, D., 444
Gross, E., 289, 290, 691
Gross, G., 452, 453
Gross, H., 161
Gross, P. R., 696
Gross, S. R., 368
Grossberg, A. L., 416
Grossberg, S. E., 140
Grossfeld, H., 680
Grossman, L., 57, 61, 63, 71, 72, 73, 91, 100
Grossmann, M. G., 308, 310, 315
Grossowicz, N., 407
Grötsch, H., 155
Groves, M. L., 279
Grubbs, G. E., 129
Grunberg-Manago, M., 15, 16, 18, 21, 25, 26, 30, 31, 464, 468, 484, 486, 487, 490
Grunicke, H., 340
Grunwald, E., 643
Grützmacher, H.-F., 765, 767
Guarino, A., 719
Guberniev, M. A., 48
Gubler, C. J., 627
Gudzinowicz, B. J., 739
Guernet, M., 158
Guerritore, A., 371
Guest, J. R., 208, 209, 210, 628
Guha, B. C., 345
Guiditta, A., 591, 610
Guidotti, G., 305, 311, 315
Guiffrida, L. E., 232
Guild, W. R., 47
Guirard, B. M., 421
Guiseley, K. B., 174
Gullekson, E., 687
Gundersen, W., 371
Gunja, Z. H., 334
Gunner, S. W., 157, 735
Gunsalus, I. C., 590, 663
Gunstone, F. D., 264, 722
Gunter, F., 454
Günther, H., 693
Gunther, H. L., 70, 492
Gupta, S., 129
Gurd, F. R. N., 272, 284, 290, 291
Gurian, B. S., 541
Gut, J., 140, 484
Gutfreund, H., 589, 602, 604, 648, 661
Guthrie, G. D., 43, 44, 114
Guthrie, R., 155, 168, 170, 381
Guthrie, S., 65, 114
Guymon, J. F., 724
Guyot, A., 167

H

Haahti, E. O. A., 715, 718, 719, 725, 728, 730, 733, 734, 737, 739, 740, 743, 746
Haas, H. J., 160
Haavik, A. G., 581, 583, 591, 679
Haavik, C. A., 473, 475
Haber, E., 286, 405
Habermann, V., 481, 482
Hack, M. H., 225
Haefele, L. F., 290
Hagen, P., 388, 389
Hager, L. P., 607, 609
Hagerman, D. D., 680, 681, 682, 693
Häggmark, A., 201, 206, 486, 489
Hagihara, B., 591, 605, 680
Hagihira, H., 570
Hagiwara, A., 466, 486, 487, 496
Hague, E., 455
Hahn, F. E., 122
Haines, A. H., 156
Hajra, A. K., 254
Hakala, M. T., 188, 189, 206
Hakomori, S.-I., 174
Halbert, S. P., 469, 472
Hall, A. N., 377
Hall, B. D., 18, 22, 25, 31, 32, 50, 104, 105
Hall, C. E., 54, 55, 113
Hall, C. W., 321, 322, 325
Hall, L. D., 156
Hall, M. O., 221
Hall, R. H., 173
Hall, R. J., 723, 740
Hall, T. C., 467
Hallén, A., 157
Hallén, O., 522
Hallgren, B., 224, 225, 251, 736, 761
Halliday, S., 499, 501
Hallum, J. V., 133, 134
Halsey, Y. D., 404
Halvorson, H. O., 628
Ham, E. A., 334
Hamaguchi, K., 57, 58, 59, 62
Hamberger, A., 523, 524
Hamburger, V., 518
Hamer, N. K., 653
Hamers, R., 484
Hamers-Casterman, C., 119, 484
Hamilton, G. A., 647, 649, 657
Hamilton, L. D., 54, 55
Hamilton, M. G., 132
Hamilton, R. I., 87
Hamilton, R. J., 711, 732
Hamm, D., 626
Hammes, G. G., 385
Hammett, L. P., 666
Hammond, B. R., 648
Hamosh, M., 247
Hampton, A., 174, 469, 470, 472, 473
Hampton, E. G., 470
Hanafusa, T., 124
Hanahan, D. J., 215-40; 216, 217, 219, 225, 226, 284
Hanawalt, P. C., 466, 493
Hancock, R. L., 696
Hand, E. S., 642, 655, 668
Handler, P., 47, 445, 446, 447, 478, 602, 604, 605, 607, 615, 616
Hands, A. R., 260, 261
Handschumacher, R. E., 464, 468, 474, 476, 481, 482, 483, 485, 490, 493
Hanes, C. S., 598
Hanig, M., 137
Hanka, L. J., 473
Hankes, L. V., 380
Hankinson, C. L., 727
Hanley, C., 388, 389
Hansen, A. E., 262
Hansen, B., 641

Hansen, H. J., 468, 469, 471
Hansen, R. G., 322, 329, 334, 336
Happold, F. C., 377, 449
Harada, M., 599
Harada, Y., 494
Harbers, E., 19, 20, 497, 498
Hardegger, E., 172
Harder, R. J., 538
Harding, H. R., 386
Hardy, F. E., 164, 325
Hargitay, B., 652
Harker, D., 276, 277
Harkness, D. R., 34
Harlan, W. R., Jr., 254, 255, 261, 262
Harm, W., 72, 91
Harmon, E. A., 226
Harmon, P., 370, 371, 372
Harold, F. V., 724
Harpaz, I., 360
Harper, A. A., 694
Harper, W. J., 727
Harrap, B. S., 271, 278
Harrar, G., 101
Harriman, P. D., 103
Harrington, H., 355-98
Harris, C. A., 467
Harris, D. L., 438, 440, 453
Harris, E. J., 553, 556, 559
Harris, F. J. C., 215
Harris, G., 335
Harris, H., 572
Harris, J., 375
Harris, J. E., 557
Harris, M., 291
Harris, R. J. C., 130
Harrison, A. P., 302
Harrison, B. D., 121
Harrison, D. G., 696
Harrison, P. M., 278
Harris-Smith, P. W., 338
Harrocks, J. A., 738
Hart, P. A., 174
Hart, R. G., 269, 308
Harte, E. M., 402, 617
Hartley, B. S., 288
Hartman, K. A., Jr., 535
Hartman, K.-U., 486
Hartman, P. E., 116, 374
Hartman, S. C., 193, 194, 195, 476, 478
Hartmann, K.-V., 201, 203, 205
Hartmann, T., 390
Hartree, E. F., 587, 605
Hartzog, H. G., 568
Haruna, I., 126, 136
Harvey, C. C., 249
Hasegawa, S., 334, 734
Haselkorn, R., 119
Hashimoto, T., 322, 323
Haskell, T. H., 171
Hass, J. W., Jr., 158
Hass, L. F., 646
Hasserodt, U., 304
Hassid, W., 322, 327, 335, 346
Hastings, A. B., 557, 561
Hata, T., 494
Hatanaka, M., 376, 377
Hatch, F. T., 198, 207, 208
Hatch, M. D., 253, 400, 405, 617
Hatefi, Y., 194, 196, 197, 198, 581, 583, 591, 679
Hattori, Y., 333
Hauber, J., 580, 596
Haug, H., 523
Hauge, J. G., 593, 606
Hause, J. A., 735
Hausen, H., 139
Hausen, P., 139
Havel, R. J., 244, 245, 246, 264
Haverkamp Begemann, P., 225
Havsteen, B. H., 660
Hawkins, N. M., 529, 560
Hawthorne, J. N., 216, 237
Hayaishi, M., 22, 31, 32, 50, 115
Hayaishi, O., 203, 378, 380, 421, 579, 698
Hayano, M., 677
Hayashi, H., 305
Hayashi, J. A., 102
Hayashibe, M., 370
Hayes, A., 554
Hayes, H., 723
Hays, R. M., 555
Hayward, L. D., 174, 175
Hazama, H., 392
Hazen, G. G., 735
Heald, P. J., 226, 525, 529, 530, 543, 545, 565, 566
Healy, J. W., 718, 728
Hearst, J. E., 293
Heath, E. C., 322, 325
Hebblethwaite, G., 175
Hechter, O., 347, 413, 680, 691
Heckman, K. D., 557
Hede, R., 45, 46, 98
Hedman, R., 591
Hedsten, U., 641
Heeschen, J. P., 157
Hehre, E. J., 333
Heidelberger, C., 20, 74, 201, 203, 205, 485, 486, 488, 489, 490
Heimberg, M., 245
Heinen, W., 604, 605, 607, 615
Heinert, D., 650
Heiney, R. E., 275
Heinrich, M. R., 475
Heinz, E., 569, 570
Heinz, F., 361, 362
Heinzelman, R. V., 775
Heiskel, E., 158
Heisler, C. R., 590
Heisterkamp, D., 314
Hejmova, L., 567
Helferich, B., 161, 162, 164
Helinski, D. R., 24, 376
Heller, D., 516
Hellerman, L., 362, 391, 600, 626, 628
Hellman, K. P., 444
Hellman, L., 734
Hellström, K., 734
Helmkamp, G. K., 57, 61
Helmreich, E., 331
Helmy, F. M., 225
Helzer, H., 590
Hemington, N., 216, 217
Henderson, J. F., 469, 473, 474, 476, 477, 502
Henderson, L. M., 380, 443, 444
Henderson, M. J., 568, 569
Hendlin, D., 493
Hendricks, U. W., 224, 225
Hendrickson, E. K., 725
Hendrickson, E. M., 343
Hendry, R. A., 728
Hendy, B. N., 651
Hennessy, A. V., 138
Henning, U., 251, 376
Hennrich, N., 644
Heppel, L. A., 34, 488, 602
Herbert, E., 35
Herbert, V., 210, 431
Herman, E. C., 186
Hermans, J., Jr., 273, 658
Hern, D., 337
Herodek, S., 262
Herr, R. R., 494
Herranen, A. M., 692, 693, 696
Herrengton, K., 91
Herrick, C. J., 545
Herriott, R. M., 68, 97, 129
Herrmann, R. L., 193, 476
Hers, H. G., 342
Hersh, R. T., 414
Hershey, A. D., 25, 30, 43, 44, 45, 46, 51, 90, 97, 98, 99, 101, 103, 108
Hershko, A., 501
Herskovits, T. T., 57, 59, 62
Hertler, W. R., 538
Herzenberg, L. A., 466, 467, 480
Herzig, D. J., 291
Hesbain, A. M., 641
Hess, G. P., 660, 661
Hess, H. H., 519, 543
Hewett, D. R., 730
Hewitt, G. C., 741

Hewson, K., 464, 468
Hexner, P. E., 89, 292
Heyns, K., 159, 168, 765, 767
Heyworth, R., 157
Hiatt, C. W., 133
Hiatt, H. H., 21, 22, 32, 50, 486
Hibberd, G. E., 284
Hichens, M., 156
Hickey, B. J., 138
Hickson, J. L., 155
Higa, A., 51, 73, 499
Higashi, T., 588, 592
Higasihara, T., 339
High, D. F., 276, 281
Highet, P. F., 737
Higuchi, T., 642
Hild, W., 523, 525
Hildebrand, R. P., 724
Hilditch, T. P., 262
Hill, F. W., 243
Hill, J., 692
Hill, R. J., 289, 305, 306, 315
Hill, R. L., 288, 290, 303, 308, 311, 313, 316
Hilleman, M. R., 133
Hillman, H. H., 526
Hilmoe, R. J., 34
Hilschmann, N., 306, 307
Hilse, K., 306, 307
Hilton, I. C., 651
Hilvers, A. G., 627
Hilz, H., 403
Himes, R. H., 193, 431
Hine, J., 657
Hinz, R. W., 131
Hipp, N. J., 279
Hirano, S., 171
Hird, F. J. R., 570
Hirose, Y., 339, 724
Hirs, C. H. W., 269, 288, 289, 307
Hirsch, H. E., 520
Hirsch, R. L., 248
Hirst, E. L., 736
Hirst, G. K., 89
Hirt, R., 502
Hishta, C., 711
Hitchborn, J. H., 120
Hitchcock, C. H. S., 441
Hitchings, G. H., 468, 472
Hiu, D. N., 730
Hixon, W. S., 520
Hlavka, J. J., 290
Ho, M., 140
Ho, P.-P., 244
Hoagland, M. B., 424, 425, 464
Hobom, G., 306, 307
Hoch, F. L., 624
Hochstein, P., 343
Hochster, G., 412
Hochster, R. M., 677
Hodes, S., 360
Hodges, R., 711
Hodgkin, A. L., 539, 540, 556, 557, 558
Hodgkin, D. C., 450, 454
Hodgson, E., 216
Hoelzl Wallach, D. F., 216
Hoffer, M., 156, 157, 158, 160, 165, 166, 167
Hoffman, J. F., 554, 558, 560, 572
Hoffman, P., 334
Hoffmann, R. C., 337
Hoffmann-Ostenhof, O., 346
Hofmann, A. F., 241
Hofmann, T., 278, 607, 608
Hofschneider, P. H., 43, 114
Hofstee, B. H. J., 658
Hogan, R., 198
Hogben, C. A., 554
Hogness, D. S., 44, 113, 117
Hohenleitner, F. F., 246
Hohorst, H. J., 340
Hokin, L., E., 553-78; 222, 531, 558, 561, 562, 563, 564, 566, 572, 691
Hokin, M. R., 553-78; 222, 531, 558, 561, 562, 563, 564, 566, 572, 691
Holcomb, D. N., 276, 294
Holden, M., 127
Holland, J. F., 479, 481
Holland, J. J., 134, 140
Hollander, N., 681, 683
Hollander, V. P., 681, 683
Hollands, K. G., 263
Hollenberg, C. H., 248
Holley, R. W., 24, 28, 29, 35, 36
Hollocher, T. C., Jr., 538, 541, 606
Hollunger, G., 591, 680
Holly, F. W., 172
Holm, M. J., 174
Holman, R. T., 255, 723
Hølmer, G., 262
Holmes, W. L., 731, 734
Holness, D., 725
Holt, A., 342
Holt, L. E., Jr., 369
Holten, D., 338
Holter, H., 519
Holton, F. A., 583
Holton, S., 169
Holtzer, A., 287
Holzel, A., 336
Holzer, H., 340, 342, 344, 450, 590
Holzer, M. E., 335
Holzl, J., 236
Holzwarth, G., 293
Homann, J., 102
Homberg, K., 163
Homer, J., 156
Hommes, F. A., 328, 589
Honeyman, J., 155, 168
Hooper, C. W., 54, 55
Hooper, D., 554
Hooper, J. L., 134, 135, 500
Hopkins, C. Y., 723
Hopkins, J. W., 17
Hopper, S., 385, 386, 702
Horecker, B. L., 326, 337, 342, 344, 571, 602, 615, 629, 649
Hörhammer, L., 236
Hori, A., 471
Hori, K., 592, 593
Horibata, K., 376, 380
Horio, T., 584, 588, 592, 593
Horiuchi, S., 34, 101, 111, 491
Horiuchi, T., 34
Horlington, M., 389
Horn, E. E., 68
Horne, R. W., 88, 89, 95, 97, 113, 120, 127, 129, 137, 138
Horning, E. C., 709-54; 652, 709, 711, 714, 715, 716, 717, 718, 719, 720, 721, 726, 728, 729, 730, 733, 734, 735, 737, 739, 740, 743, 745, 746
Horning, M. G., 247, 254, 722, 741
Hornstein, I., 716
Horodniceanu, F., 133
Horowitz, N. H., 382, 391
Horrocks, B. J., 721
Horsfall, F. L., Jr., 139, 502
Horst, A., 248
Horton, A. A., 426
Horton, D., 170, 172
Horton, H. R., 699
Horvath, I., 362, 365, 370
Horwitt, M. K., 249
Horwitz, S. B., 338, 629
Hosaka, Y., 137
Hoskins, D. D., 616
Hosokawa, Y., 137
Hossenlopp, C., 494
Hotta, S., 136
Houcke, E., 230
Hough, L., 155, 156, 157, 169, 174, 175
Housewright, R. D., 358
How, M. J., 169
Howard, G. A., 717
Howard, P. J., 559
Howard, R. L., 579, 580, 596, 607
Howard-Flanders, P., 113, 492
Howatson, A. F., 89, 129
Howe, C., 136, 138
Howell, G. B., 368
Howell, R., 374
Howells, E. R., 280, 308
Howland, J. L., 589

Hoyer, B. H., 134
Hoyer, J. R., 469
Hoyer, L. W., 469
Hoyle, L., 137, 138
Hrachovec, J. P., 251
Hsia, D. Y.-Y., 336
Hsu, C., 373
Hsu, T. C., 56, 67, 492, 493
Huang, H. T., 367
Huang, R. C., 50, 73, 97 697
Huber, G., 162
Huber, K., 113
Hubert, A., 652
Hubert-Habart, M., 475
Hubicki, J. A., 735
Hübscher, G., 216, 220, 221, 243, 364, 563, 564
Hudson, B., 400, 401, 402, 404, 615, 617
Hudson, C. S., 159
Hudson, J. R., 724
Hudson, P. B., 659
Hudson, R. F., 647
Hudson, R. J., 368
Huebner, V. R., 736
Huehns, E. R., 303, 304, 311, 312
Huennekens, F. M., 185, 186, 187, 188, 189, 190, 193, 194, 196, 197, 198, 203, 480, 580, 663
Huerto, E., 131
Huf, E. G., 558
Huff, J. W., 37, 120
Hugel, M. F., 741
Huggins, C. G., 562
Hughes, D., 739
Hughes, D. E., 422
Hughes, E. D., 656
Hughes, M. B., 721
Hughes, R. C., 331, 385, 649
Huisman, T. H. J., 302, 303, 311, 312, 313
Hulme, A. C., 768
Hulsmann, W. C., 254
Hultin, D., 694
Hultin, T., 73, 74, 500
Hummel, J. P., 288
Hummeler, K., 133, 137
Humphrey, R. M., 70
Humphreys, G. K., 201, 202, 204
Humphreys, J. S., 360
Humphreys, S. R., 186, 188
Hunt, J. A., 303, 305, 311, 312, 500
Hunter, J., 465
Hunter, M. J., 275
Hunter, W. S., 43, 44, 129
Huppert, J., 43, 113, 114
Hurd, R. G., 554
Hurlbert, R. B., 477, 478
Hurlock, B., 681
Hurtubise, F. G., 155
Hurwitz, J., 16, 17, 19, 20, 21, 34, 50, 73, 104, 106, 107, 115, 448, 464, 481, 486, 490, 497, 498, 499, 696
Husson, F., 535, 536
Hutchinson, D. W., 653
Hutchinson, W. D., 304
Hutchison, D. J., 466, 467, 469, 470, 471, 475, 480, 490, 497
Hutson, D. H., 158, 159, 334
Hutton, J. J., 102
Huwyler, S., 166
Huxley, A. F., 540
Huxley, H. E., 279
Huzino, A., 385
Hydén, H., 518, 522, 523, 524, 528, 540
Hylin, J. W., 408, 409
Hylin, V., 471
Hynie, S., 247

I

Iaccarino, M., 443, 688
Iacono, J. M., 245
Ibne-Rasa, K. M., 647
Ichihara, K., 449, 450
Ichiyama, A., 378
Ifft, J. B., 293
Igo, R. P., 604
Iijima, T., 496
Ikeda, K., 452
Ikeda, N., 726
Ikeda, R. M., 726, 731
Ikeda, Y., 44, 115
Ikegami, N., 140
Ikegami, R., 499
Ikekawa, N., 734
Illingworth, B., 332
Ilves, S. M., 346
Ilyashenko, B. N., 113
Ilyin, V. S., 341
Imahori, K., 278, 294
Imai, K., 425, 426, 429
Imamoto, F., 377
Imanaka, H., 374
Imanishi, M., 20, 73, 499
Imsande, J., 445, 446, 447
Inagaki, H., 292
Inagaki, M., 661
Inagami, T., 664
Inam-Ul-Haq, 719
Inch, T. D., 171
Indira, M., 343
Ingles, D. L., 159, 175
Ingraham, J. L., 724
Ingraham, L., 98, 103
Ingraham, L. L., 382, 639, 650
Ingraham, V., 491
Ingram, V. M., 33, 36, 274 274, 303, 305, 311, 312, 316
Inman, R. B., 56, 57, 61, 63, 492
Inoue, S., 46
Inouye, H., 590
Inouye, T., 336
Inouye, Y., 171
Ireland, R., 248
Irie, R., 219
Irvine, D. H., 314
Irzykiewics, H., 401, 405
Isbell, A. F., 744
Isbell, H. S., 155, 159
Isenberg, I., 538
Ishihama, A., 50, 105, 464, 500
Ishii, Y., 323
Ishikawa, T., 367
Ishimoto, M., 403
Ishizawa, M., 130
Islam, M. F., 335, 343
Israels, A. L. M., 302
Issekutz, B., Jr., 248
Isselbacher, K. J., 243, 264, 336
Itagaki, E., 594
Itano, H. A., 301, 304, 311, 313
Ito, J., 377
Ito, K., 599
Ito, M., 365
Ito, Y., 43, 44, 129, 164, 171
Ives, D. H., 483
Iwanaga, M., 219
Iwashima, A., 438
Iwatsubo, M., 599, 614, 625
Iyer, G. Y. N., 343

J

Jacherts, D., 70, 71, 91, 492
Jackson, E. L., 159
Jackson, J. F., 465, 470
Jackson, H. D., 721
Jackson, M., 368
Jackson, R. L., 618
Jackson, R. W., 723
Jacob, A., 259
Jacob, F., 24, 46, 48, 50, 84, 90, 105, 116, 695, 697
Jacobs, A. S., 312
Jacobs, S. B., 488
Jacobson, B., 322, 328, 334, 535
Jacobson, M., 741
Jacoby, G. A., 374, 381, 387
Jacquez, J. A., 471, 478, 481, 485, 488, 493
Jaenicke, L., 210, 211, 399, 432, 437, 662, 663
Jaffe, J. J., 481, 482, 483
Jagenburg, R., 251
Jäger, H., 157
Jahnke, H. K., 494

Jakoby, W. B., 400, 407, 629, 661
James, A. T., 138, 215, 216, 217, 258, 259, 260, 713, 719, 723, 727, 744
James, E., 499
Jandorek, R. D., 734
Jandorf, B. J., 656
Janicki, B. W., 243, 244
Jann, G. J., 115
Janowitz, H. D., 244
Janson, J., 160, 162
Janssen, R. J., 469
Jarabak, J., 626, 681
Jardetzky, C. D., 155, 156
Jardetzky, O., 155, 156
Järnefelt, J., 528, 529, 531, 559, 561, 564
Jasinska, S., 484
Jayaraman, J., 581
Jayme, G., 159
Jeanloz, D. A., 170, 171, 174
Jeanrenaud, B., 692
Jedeikin, L. A., 680
Jeener, R., 119
Jeffery, P. G., 730
Jeljaszewicz, J., 326
Jen, M. K., 521
Jencks, W. P., 639-76; 58, 287, 641, 642, 647, 648, 652, 653, 654, 655, 656, 657, 661, 662, 666, 668, 669
Jenkin, H. M., 122
Jenkins, R. C. Ll., 293
Jenkins, W. T., 385, 649, 661
Jennings, D., 554
Jennings, E. C., 741
Jennings, W. G., 730, 731
Jensen, D., 365
Jensen, E. V., 399
Jensen, P. K., 678
Jerne, N. K., 103
Jervell, K. F., 692, 693, 696
Jervis, E. L., 570
Jesaitis, M. A., 99
Jesting, E., 721
Jilge, G., 366, 387
Jim, R. T. S., 311
Jirgensons, B., 293, 356, 525
Joassin, G., 342
Jobsis, F., 541
Jochims, J., 173
Joel, P. B., 680, 681, 682
Johannis, J., 161
Johns, H. E., 71
Johnson, A. B., 374, 375
Johnson, A. H., 480
Johnson, A. W., 167, 450, 454
Johnson, B. C., 328, 361, 363, 372
Johnson, D. E., 728
Johnson, E. W., 136
Johnson, H. E., 775
Johnson, H. G., 124
Johnson, I. S., 502
Johnson, J. A., 559
Johnson, J. A., Jr., 470
Johnson, J. R., 291
Johnson, L., 739
Johnson, L. F., 156, 158, 170, 172
Johnson, L. H., 567, 568
Johnson, M. J., 326
Johnson, M. W., 120
Johnson, P. L., 332
Johnson, S. L., 655
Johnston, C. C., 380
Johnston, J. M., 242, 243, 264
Johnston, M. J., 736
Johnston, P. V., 256
Johnstone, R. A. W., 737
Johnstone, R. M., 359
Joklik, W. K., 45, 49, 124, 125, 134, 496
Jokura, K., 322, 324, 325
Jollès, G. R., 648
Jolly, P. C., 556
Jonas, H., 681
Jones, A. S., 168
Jones, D. N., 224
Jones, E. A., 589
Jones, E. P., 127, 718
Jones, G. E. S., 734
Jones, H. W., Jr., 677, 679
Jones, J. C., 690
Jones, J. K. N., 157, 158, 164, 168, 171, 174, 735
Jones, K. M., 155, 208, 210
Jones, M., 469, 471, 472
Jones, M. E., 360
Jones, O. W., 24, 490, 499, 501, 694
Jones, R. T., 301, 302, 303, 305, 311, 312, 313, 314
Jones, W. A., 741
Jonsson, B., 641
Jordan, D. C., 326
Jordan, E., 116
Jordan, L. E., 133, 136
Jordon, D. O., 54, 56, 57
Jörgensen, C. B., 554, 559, 571
Joseph, J. P., 166
Joshi, J. G., 47, 447
Joslyn, M. A., 406
Josse, J., 52, 53, 56, 66, 107, 112, 192, 324, 325
Journey, L. J., 19, 497
Jowett, P., 721
Joyce, B. K., 661
Joyce, R. J., 663
Juby, P. F., 444
Judah, J. D., 529, 530, 565, 566, 567
Juergens, W. G., 325
Juita, P., 452
Jukes, T. H., 185, 188, 206, 430, 479
Julian, G. R., 627
Junga, I. G., 171, 472, 473, 474
Jungas, R. L., 247, 248
Jungwirth, C., 368
Jurtschuk, P., 583, 591, 629
Jurtshuk, P., Jr., 400
Just, G., 734
Jusunose, E., 257
Juvet, R. S., 717

K

Kaczka, E. A., 493, 494
Kadenbach, B., 591
Kado, R. T., 533
Kaesberg, P., 121
Kagan, Z. S., 368
Kaganowicz, I., 248
Kagawa, Y., 344, 346
Kägi, J. H. R., 624
Kahan, F. M., 18, 23, 464, 481, 486
Kahn, P., 105
Kahn, R. K., 45, 46, 47
Kaihara, M., 380
Kaiser, A. D., 44, 45, 53, 113, 117
Kaiser, E. T., 647
Kaji, A., 402
Kaji, H., 347, 413
Kajiwara, K., 500
Kakimoto, T., 368
Kalckar, H. M., 116, 474
Kaleita, E., 686
Kalis, V. E., 168
Kallé, G. P., 466, 474, 475
Kallen, R. G., 48, 253
Kaller, H., 228
Kallio, R. E., 570
Kalman, C. F., 567, 568
Kalman, S. M., 690, 694
Kalmus, A., 601
Kalousek, F., 482
Kalowsky, A., 494
Kamahora, J., 122, 124, 140
Kamei, T., 695
Kamen, M. D., 415, 592, 593
Kameswaran, L., 389
Kameyama, S., 122, 124
Kameyama, T., 17
Kamibayashi, A., 724, 730
Kamin, H., 615
Kaminer, B., 539
Kamiya, T., 130
Kammen, H. O., 477
Kanamori, M., 368
Kanarek, A. D., 137
Kanazawa, J., 739
Kandaswamy, T. S., 476

Kandler, O., 333
Kane, R. E., 414
Kanemori, M., 368
Kaneshiro, T., 257, 722
Kanfer, J., 346, 564, 566
Kanfer, J. N., 220, 364
Kang, H. H., 380, 443, 444
Kaniuga, Z., 580, 596
Kaper, J. M., 119
Kaplan, A., 375
Kaplan, A. S., 48, 127, 128, 487, 494, 496
Kaplan, H. S., 70, 492, 493
Kaplan, L., 479
Kaplan, M. M., 89
Kaplan, N. O., 338, 429, 445, 478, 590, 598, 609, 622, 627, 629, 681, 682
Kaplanis, J. N., 734
Kapoor, M., 360
Kapphahn, J. I., 520
Kar, N. C., 345
Kára, J., 464, 481
Karetny-Govrin, H., 601
Karlin, L. J., 555
Karlson, P., 383, 697
Karmen, A., 232, 249, 254, 712, 718, 719, 722, 728
Karnofsky, D. A., 485
Karnovsky, M. L., 216, 343
Karpeiskii, M. Y., 388
Karplus, M., 155
Kartha, G., 277
Kaselkorn, R., 120
Kass, S. J., 129
Kassanis, B., 121
Katagiri, H., 387, 425, 426, 429
Katanuma, N., 386
Katchalski, E., 662, 663
Kates, M., 138, 215, 216, 217, 219, 224, 225, 226
Katnik, R. J., 739
Kato, G. K., 288
Kato, J., 370
Kato, K., 358
Kato, S., 122, 124, 140
Kato, Y., 391
Katoh, S., 618
Katoh, T., 737
Kattermann, R., 344, 613
Katunuma, H., 431, 433
Katunuma, N., 385
Katz, E., 19, 375, 380
Katz, L., 258, 369, 723
Katz, J., 254, 648
Katz, J. S., 58
Katz, S., 56, 59
Katz, W., 101
Katzen, H. M., 404, 405, 406
Kaufman, B., 590
Kaufman, H. E., 140, 493
Kaufman, H. R., 711
Kaufman, S., 187, 188, 381, 383
Kaufman, S. F., 313
Kaufmann, E., 173, 611
Kauzmann, W., 270, 282, 284, 285, 286, 287, 535, 642, 661
Kawada, M., 344, 345
Kawai, A., 499
Kawai, F., 426, 427, 428
Kawai, H., 378
Kawai, K., 137, 593
Kawamata, J., 19, 20, 73, 108, 499
Kawasaki, T., 438
Kawashima, N., 599
Kawiak, J., 522
Kay, D., 97, 113
Kay, L. D., 194, 196, 197, 198
Kay, L. M., 276
Kay, R. E., 245
Kayden, H. J., 249
Kaziro, Y., 441
Kearney, E. B., 429, 579, 580, 596, 597, 600, 606, 607, 612, 613, 614, 661
Kearney, P. C., 362
Keay, L., 611
Keck, K., 110
Keech, D. B., 629
Keeney, M., 258, 369, 723
Kegeles, G., 293
Keil, B., 288
Keilin, D., 587, 605
Keir, H. M., 65, 66
Keister, D. L., 618
Kekwick, A., 248
Kekwick, R. A., 303, 312
Kelemen, M. V., 106
Kellenberger, G., 64, 117
Kellenberger, E., 25, 103
Keller, R. A., 293
Kelley, G. G., 466, 468, 470, 473
Kellock, T. D., 258
Kelly, H., 346
Kelly, S., 338, 345
Kemp, P., 216
Kendig, J. H., 534
Kendrew, J. C., 269, 271, 272, 274, 278, 279, 280, 283, 307, 308, 310, 314
Kennan, R. W., 222
Kennedy, E. P., 220, 221, 242, 263, 364, 563, 566, 646
Kennell, D., 26
Kenney, F. T., 386, 387, 700, 701
Kenny, C. P., 378
Kent, A. B., 649
Kent, P. W., 157, 175
Kenten, R. H., 646
Kepes, A., 571
Kepler, R. G., 538
Keppie, J., 338
Keresztesy, J. C., 195, 198, 199, 200, 201, 207, 210, 431
Kerpel, S., 246
Kerr, I. M., 132
Kerridge, D., 497
Kersten, H., 20, 21, 73, 494, 495, 498
Kersten, W., 20, 73, 498
Kessel, D., 571
Kessler, D., 384
Kessler, G., 346
Kessler, J. I., 244
Kety, S. S., 513, 542
Keutmann, E. H., 734
Keynan, A., 51, 73, 499
Keynes, R. D., 556, 557, 558, 559
Khanade, J. M., 249, 256
Kheruvimova, U. A., 359
Khomutov, R. M., 388
Khorana, H. G., 30, 31, 35, 173
Kida, S., 377
Kidd, J., 161
Kidder, G. W., 437, 475, 476
Kidson, C., 343
Kielar, E. A., 737
Kies, M. W., 374
Kiho, Y., 91
Kill, F., 558, 563
Kijimoto, S., 588
Kikuchi, G., 362
Kilkson, R., 95
Killias, U., 334
Kilpatrick, M., Jr., 654
Kim, H. G., 89, 292
Kim, K., 382, 387
Kim, Y. T., 120
Kimberg, D. V., 686
Kimmel, J. R., 288
Kimming, J., 168
King, H. K., 388, 390
King, J. W. B., 572
King, M. V., 276, 278
King, T. E., 424, 579, 580, 596, 597, 607, 609
King, T. P., 405
King, W. J., 737
Kingma, S., 311
Kingsbury, C. A., 657
Kingsbury, D. W., 498
Kingston, C. R., 741
Kinnersly, H. W., 532
Kinoshita, J. H., 336
Kinoshita, S., 365, 391
Kinsky, S. C., 648
Kinsolving, C. R., 529, 554, 559
Kinter, W., 568
Kipping, P. J., 730
Kirby, G. W., 653
Kirby, K. S., 29, 44, 46
Kircher, H. W., 157, 735
Kirchner, P., 729
Kirk, J. M., 19, 20, 73, 497, 498
Kirk, M., 346

Kirk, P. L., 728, 739, 741
Kirkland, J. J., 739
Kirkman, H. N., 343, 627
Kirschfeld, S., 475
Kirschman, J. C., 256
Kirschner, L. B., 561
Kirschner, M. A., 734
Kirshner, N., 384
Kirsten, R., 290
Kiselev, N. A., 54
Kishi, T., 425, 426, 428
Kisliuk, R. L., 199, 206, 208, 209, 210
Kiss, J., 172
Kissane, J. M., 520
Kisselev, N. A., 119
Kisumi, M., 370
Kit, S., 43-82; 44, 47, 48, 51, 56, 57, 61, 73, 124, 487, 489, 492, 493, 496
Kitano, T., 136
Kitaoka, S., 162, 168, 171
Kitazume, Y., 21, 50
Kitos, P. A., 359
Kittler, M., 403
Kjaer, A., 402
Kjellen, L., 487
Kjølberg, O., 159
Klain, G., 361, 363, 372
Klainer, L. M., 331
Klamerth, O., 137
Klatskin, G., 681
Klausner, H., 245
Klavins, J. E., 158
Klavins, M., 682, 683
Klebanoff, S. J., 384, 683
Klein, A. K., 739
Klein, E., 735
Klein, G., 481, 489
Klein, R., 133
Klein, R. L., 559
Kleinschmidt, A., 45, 46, 47
Kleinschmidt, W. J., 140
Kleinzeller, A., 567, 568
Klemer, A., 155, 163
Klemperer, H. G., 26
Klenk, E., 224, 225, 230, 232, 233, 255, 722
Klenow, H., 476, 489
Kleppe, K., 322, 324, 333, 337
Kleschick, A., 723
Klesper, E., 741
Klesse, P., 526, 527
Klethi, J., 336
Kliman, B., 734
Klingenberg, M., 340, 589, 591, 592
Klingman, J. D., 513
Klipfel, F. J., 657
Klotz, I. M., 270, 275, 282, 284, 285, 286, 287, 535, 664
Klouwen, H., 218
Klug, A., 86
Klyne, W., 402
Knape, G., 403
Knapp, A., 378
Knappenberger, M. H., 662
Knight, C. A., 29, 33, 34, 37, 119, 120, 129, 137, 138
Knight, W. S., 284
Knights, B. A., 734, 745, 746
Knipprath, W., 722
Knobil, E., 247
Knon, R., 126
Knox, E., 362, 365
Knox, W. E., 378, 386, 399, 443, 605, 698, 699, 700, 701
Koalhage, H., 34
Kobashi, Y., 737
Kobata, A., 322, 323, 335
Kobayashi, H., 679
Kobayashi, T., 429
Kobler, J., 722
Koch, G., 108, 134
Kochakian, C. D., 626, 678, 692, 696
Kochen, J., 216, 217, 218
Kochetkov, N. K., 171, 324
Köchling, H., 168
Kodicek, E., 257, 722, 740
Koefoed-Johnsen, V., 556, 559
Koelle, G. B., 522
Koenig, H., 234
Koeppe, O. J., 692
Koerner, J. F., 107, 110, 111, 192
Koffler, H., 172
Koft, B. W., 432
Kogut, M., 570
Kohlhaw, G., 342
Kohn, P., 337
Koike, M., 590, 607, 650
Koike, S., 358
Koine, A., 161
Kok, I. P., 128
Kokko, J. P., 157
Kolb, B., 728, 729
Kolstad, R. A., 115
Komano, T., 163
Komrower, G. M., 336
Kondo, N., 31
Konetska, W. A., 107
Konigsberg, W., 289, 305, 306, 311, 315
Koningsberger, C., 643
Koningsberger, V. V., 654
Kono, T., 414
Konstas, S., 163
Kontz, S., 692
Kooiman, P., 736
Kopacka, B., 116
Kopaczyk, K. C., 256
Kopko, F., 400, 401
Koppelman, R., 119
Koprowski, H., 133
Korchak, H. M., 256
Kordova, N., 140
Korman, E. F., 335
Korn, D., 119, 495, 496
Korn, E. D., 244, 261
Kornberg, A., 23, 32, 53, 56, 66, 67, 99, 107, 110, 111, 112, 114, 192, 201, 203, 324, 325, 429, 445, 486, 490, 491, 564
Kornberg, H. L., 628
Kornberg, S. R., 107, 112, 192, 324, 325
Kornblatt, J., 254
Korner, A., 693
Kornfeld, R., 329, 332
Kornfeld, S., 322, 326, 337
Korte, F., 426, 428, 441
Koshland, D. E., Jr., 291, 563, 639, 651, 659
Kosicki, G. W., 657
Kosower, E. M., 639
Koster, J., 225
Kostyk, I., 723
Koszalka, T. R., 373
Kotaka, T., 292
Kotyk, A., 568
Koukol, J., 381
Koval, G. J., 527, 559, 628
Kowa, Y., 257
Kowalewski, Z., 157
Kowalsky, A. G., 342
Kozinski, A. W., 56, 62, 65, 70, 100, 103, 111, 113
Kozloff, L., 83, 96, 97, 101
Krackov, J., 732
Krakow, G., 628
Krakow, J. S., 26
Krampitz, L. O., 344, 650
Krane, S. M., 336, 568, 569
Kranz, Z. H., 725, 732
Krasna, A. I., 453
Krässig, H., 155
Krause, R. M., 102
Krauss, M. T., 157
Kraut, J., 276, 281
Krebs, E. G., 331, 341, 342, 649
Krebs, H. A., 358, 557, 588, 629
Krehl, W. A., 443
Kreil, G., 288, 584
Kreiling, A., 422
Kremer, G., 255
Kresge, A. J., 655
Kretchmar, A., 691
Kretchmer, N., 700
Kretovich, W. L., 368
Krieg, D. R., 91, 93, 95
Krimsky, I., 646
Krisch, K., 581
Krishnaswamy, P. R., 193,

358, 359, 429
Krisman, C. R., 332
Kristensen, G., 262
Kritchevsky, G., 516
Krivis, A., 775
Kroeger, H., 485
Kroger, H., 50
Krone, W., 35
Kropa, E. L., 539
Kroplin-Rueff, L., 251
Krueger, R. C., 382
Krug, R., 21
Krüger, F., 168, 243
Krüger, O., 160
Krupka, R. M., 668
Kubinski, H., 134
Kubo, H., 599, 625
Kubota, T., 731
Kuby, S. A., 627
Kuehl, L. R., 46
Kuening, R., 722
Kugelman, M., 477
Kuhn, H., 164
Kuhn, R., 160, 173, 526, 527, 419
Kuhn, W., 63, 291
Kulhman, R. E., 520
Kullnig, R. K., 155, 156, 157
Kumamoto, J., 658
Kumar, D., 734
Kummerow, F. A., 256
Kun, E., 124, 408, 411, 416, 612
Kundel, H., 249, 256
Kündig, W., 157
Kuninaka, A., 34
Kunkel, H. G., 302, 312
Kuno, S., 99, 325, 380, 421
Kuntz, I., 642
Kuo, M. H., 366
Kupchan, S. M., 641
Kupiecki, F. P., 420
Kupke, D. W., 89, 292
Kupke, G., 378
Kurahashi, K., 324
Kuramitsu, H. K., 391
Kurland, C., 21, 22, 24, 32, 50
Kuroda, T., 389
Kusai, K., 588, 592, 605
Kusunose, E., 257
Kusunose, M., 257
Kuwabara, T., 264
Kuwada, S., 425, 426, 428
Kvam, D. C., 464, 468, 472, 696
Kwietny-Govrin, H., 468
Kyogoku, Y., 61

L

LaBar, F. E., 292
Labbe, R. F., 591
Labeyrie, F., 613
Laby, M. R., 693
Lachman, A., 652
Lachman, L., 642
Lacko, L., 567
Ladd, J. N., 208
Ladenheim, H., 643
La Du, B. N., 374, 381, 387
Lagerkvist, U., 35
Lahr, E. L., 442
Laidler, K. J., 668
Laine, T., 420
Laird, C., 70, 72, 73, 492
Lajtha, A., 544
Laland, P., 140
Laland, S., 140
Lambert, R., 171, 653
Lamberton, J. A., 732
Lamkin, W. M., 721
Lampen, J. O., 335
Lampkin-Hibbard, J. M., 490
Lamprecht, W., 361, 362
Lancaster, J. E., 494, 497
Landau, B. R., 347
Landowne, R. A., 709, 711, 712, 717, 721, 744, 745
Lands, W. E. M., 222
Lane, D., 22, 57, 60, 62, 70, 71, 72, 91
Lane, G. H., Jr., 762
Lang, D., 45, 46, 47, 737, 738
Lang, H., 374
Lang, K., 374
Langan, T. A., 478
Langdon, G. R., 617
Langdon, R. G., 401, 405
Lange, P. W., 523, 524
Langer, L., 680
Langer, S. H., 717, 719
Langridge, R., 54, 55
Lanni, F., 116, 117
Lanni, Y. T., 102
Lansford, E. M., Jr., 420
Lanyi, J., 52
Lapinski, R., 648
Lapkin, M., 656
LaPlante, E. S., 469
Larabee, G., 513
Lardy, H. A., 337, 646
Lark, K. G., 25
Larner, J., 329, 330
Larrabee, A. R., 198, 199, 207, 209, 210, 431
Larralde, J., 569
Larsen, J. L., 346
Larson, A. D., 570
Larsson, S., 224, 225, 522, 736
Lash, J. W., 328
Laskowski, M., Sr., 34, 35
Lassen, N. A., 558, 563
Lassen, U. V., 558, 563
Laszlo, J., 465
Laszt, L., 569
Lata, M., 357, 358
Latham, H., 440
Latner, A. L., 385
Latterell, F. M., 407
Lauffer, M. A., 45, 87, 89, 95, 96, 113, 119
Laurence, G. D., 137
Lauryssens, M., 258, 260, 264
Lautenschlager, H., 663
Lauter, C. J., 526
Laver, W. G., 138
Law, J. H., 723
Law, L. W., 464, 466, 467, 468, 469, 470, 471, 474, 476, 477, 478, 479, 480, 481, 482, 485, 486, 489, 490, 491
Law, M. D., 256
Lawley, P. D., 67, 68, 73, 94, 95, 491
Lawson, W. B., 29, 290, 291
Layman, N. W., 693
Lazare, R., 389
Lazzarini, R. A., 595
Lea, D. J., 377
Leaback, D. H., 163, 171
Leach, F. R., 380, 443, 444
Leaf, A., 554, 555, 557, 558
Leahy, W. V. C., 243, 244
Leat, W. M. F., 262
Leavitt, R., 370
Lebeau, M. C., 734
LeBras, G., 367
Leder, I. G., 438, 440
Lederer, E., 155, 730, 768, 775
Ledingham, G. A., 723
Lee, C. P., 596
Lee, E. K. C., 718
Lee, H. H., 625
Lee, H. M., 469
Lee, H. S., 232
Lee, J. B., 159
Lee, J. K., 718
Lee, J. S., 569
Lee, L. T., 138
Lee, M. H., 120
Lee, N. D., 469, 698
Lee, W. W., 156, 167, 170, 291
Leegwater, D. C., 216
Lees, H., 378
Leete, E., 444
LeFevre, P. G., 553, 554, 559, 567
Lefort, D., 725
Lehman, I. R., 66, 99, 112, 325
Lehmann, H., 303, 311, 312, 314, 316
Lehmann, J., 156, 158, 163, 171
Lehninger, A. L., 413, 414, 537, 579, 591, 680
Lehrer, H. I., 63, 100

Leibowitz, J., 161, 174
Leikin, S. L., 303
Leiner, K. Y., 520
Leitz, F. H. B., 444
Leloir, L. F., 322, 329, 332, 333, 345
Lemieux, R. U., 155-84; 155, 156, 157, 158, 161, 162, 174
Lemmon, R. M., 545
Lengyel, P., 24, 499, 501, 694
Lenhert, P. G., 454
Lennarz, W. J., 257, 258, 259, 260, 369, 722, 723
Lennè, H. U., 287
Lenz, J., 159
Lenz, R. W., 157
Leon, H. A., 694
Leon, S., 468
Leonard, C. G., 358
Leonard, W. J., Jr., 294
Leonetti, F., 561
Leonhauser, S., 581
Leoret, C., 768
LePage, G. A., 469, 471, 472, 502
Lepage, M., 156
Lerman, L. S., 51, 68
Lerman, M. I., 385
Lerman, S., 140, 493
Lerner, A. B., 775
Lesley, S. M., 334
Lester, G., 680, 691
Lester, R. L., 581
Letsinger, R. L., 643
Lett, J. T., 68
Letters, R., 174
Leuchtenberger, C., 129
Leupold, F., 255
Leuthardt, F., 435, 436, 437, 441
Levenberg, B., 360, 372, 383, 476, 478
Levenbrook, L., 591
Levi, H. A., 534
Levi, L., 738
Levin, A. P., 107, 465
Levin, D. H., 464
Levin, E. Y., 383
Levin, G., 601
Levin, Y., 662, 663
Levine, E., 57
Levine, L., 58, 63, 100, 108
Levine, M., 118, 494, 495, 496
Levine, R., 467, 569
Levine, S., 57, 61, 63, 100, 156, 157
Levine, W., 610
Levinthal, C., 18, 34, 45, 46, 47, 51, 73, 90, 98, 499
Levintow, L., 121, 133, 134, 135, 416, 500
Levis, G., 251, 254, 722
Levisohn, S., 47, 48
Levy, H. B., 133
Levy, H. M., 659
Levy, H. R., 344, 686
Levy, M., 287
Lewin, L. M., 438
Lewis, C., 520, 521
Lewis, G. P., 544
Lewis, L. A., 248
Lewis, R. W., 262
Lewis, U. J., 140
Lewis, V. J., Jr., 127
Leybold, K., 581
Li, T.-K., 294, 623, 660
Liang, C. Y., 155
Liao, S., 680, 683, 694, 695
Libet, B., 559
Lichstein, H. C., 420
Lichtenstein, E. P., 739
Lichtenstein, J., 98, 99, 108, 109, 191, 192, 202, 205
Lichtenstein, N., 665
Lichtenthaler, F. W., 156, 175
Liddle, A. M., 160, 161
Liebau, H., 383
Lieberman, I., 466, 470, 474, 475, 477, 648
Liebhaber, H., 131
Lif, T., 51, 97, 98
Lifson, M., 569
Light, A., 288
Light, R. J., 257, 258, 260, 723
Ligon, D. S., 377
Likhosherstov, L. M., 171
Lilly, F., 131
Lin, C. C., 570
Lin, E. C. C., 338, 698, 699, 700
Lindberg, B., 158, 159, 160, 162
Lindberg, O., 591
Lindblom, R. O., 545
Lindegren, C. C., 107
Lindemann, L. P., 756
Linderstrøm-Lang, K., 519, 659
Lindgren, F. T., 249
Lindlar, F., 246
Lindley, H., 665
Lindquist, T., 522
Lindsay, D. B., 216, 217
Lindström, B., 522
Lineback, D. R., 155-84; 157
Ling, G., 554
Lingens, F., 445
Link, F., 140, 484
Link, M. W., 628
Link, W. E., 725, 727
Linker, A., 334
Links, J., 591
Linman, J. W., 223
Linton, S., 373
Lipkin, D., 160
Lipmann, F., 24, 415, 499, 500, 501, 557, 648
Lippincott, J. A., 119
Lippoldt, R. E., 294
Lipshitz, R., 30
Lipsky, S. R., 709, 711, 712, 713, 717, 721, 744, 745
Liquori, A. M., 305
Liss, M., 338, 629
Lissau, A., 236
Lissitzky, S., 382, 383
Listowsky, I., 294
Litchfield, C., 744
Litman, R. M., 65, 67, 70, 95, 490, 491
Litt, M., 54
Little, K. D., 568
Littlefield, J. W., 48, 64, 206, 487
Litwack, G., 386
Liu, J. C., 311
Livingston, K. E., 519
Ljunggren, M., 591, 610
Lloyd, A. G., 155, 174
Lloyd, H. A., 737
Lloyd, P. F., 163
Lockart, R. Z., Jr., 134
Lockinger, W., 526, 527
Lodeman, E., 71
Loeb, M. R., 108, 109, 202, 205
Loeb, T., 114
Loening, U. E., 50
Loewus, F. A., 338, 345
Lofland, H. B., 221
Loh, P. C., 122, 134
Lohmann, K., 653
Lohmar, R. L., 723
Lohse, F., 172
Lombrozo, M. E., 690
London, M., 659
Long, B., 455
Long, F. A., 657
Long, L., Jr., 175
Longinotti, L., 343
Longman, R. T., 762
Longmuir, N. M., 558
Longuet-Higgins, H. C., 63
Loo, V. H., 158
Loper, J. C., 17, 104
Lorch, E., 253
Lorchak, H. M., 256
Lord, P. A., 174
Lord, R. C., 535
Loring, H. S., 120
Lorkiewicz, Z., 70, 492
Losse, A., 729
Losse, G., 729
Loster, J. B., 259
Lotz, M., 481
Louloudes, S. J., 734
Lourie, H., 534
Love, R., 127
Loveday, G., 647
Loveless, A., 93
Lovell, R. H., 244

Lovelock, J. E., 712, 713
Lovenberg, W., 388, 389
Loviny, T., 367
Løvtrup, S., 523
Low, B. W., 274, 276, 277, 278, 279
Low, I. E., 131
Lowe, A. E., 718
Lowe, I. P., 520, 521
Lowenstein, J. M., 253, 592
Lowey, S., 668
Lowry, O. H., 188, 340, 341, 520, 521, 532
Lubin, M., 483, 571
Lucas, F. V., 683
Lucas, J. M., 264
Lucas, N., 388
Luck, J. M., 729
Lüderitz, O., 160
Ludwig, G., 428
Ludwig, M. L., 275
Luft, R., 591
Luh, W., 340
Luick, J. R., 264
Lukens, L. N., 469
Lummis, N. E., 494
Lumry, R., 657, 659, 660
Lund, E., 133, 558
Lundegardh, H., 558
Lunt, R. B., 467
Luria, S. E., 73, 106, 112, 116, 192, 202
Luse, S. A., 217
Lusty, C. J., 580, 596
Lute, M., 96
Luukkainen, T., 718, 719, 733, 734, 743
Luzzati, D., 64
Luzzati, M., 612
Luzzati, V., 54, 64, 68, 276, 535, 536
Luzzatto, L., 342
Lwoff, A., 84, 89, 106, 120, 135
Lycke, E., 133
Lynch, C. C., 158
Lynen, F., 251, 256, 399, 662
Lyon, J. B., 332
Lyons, M. J., 131
Lyras, C., 338

M

Maaløe, O., 22, 24, 113, 466, 493
Maas, W. K., 371, 420, 421, 422
Maass, D., 101
McAuslan, B. R., 496
McCaffrey, I., 718
McCaman, R. E., 520, 521
McCann, M. P., 172, 337, 432
McCapra, F., 759
McCarthy, A. L., 740
McCarthy, B. J., 21, 22, 26, 31, 50
McCarthy, E., 739
McCarty, M., 43, 102
McCasland, G. E., 156, 158
Maclean, E., 55, 113
McClelland, L., 140
McCloskey, J. A., 765, 770, 771, 772
McCluer, R. H., 232
McCollister, R. J., 465, 469
McComb, E. A., 172
McCoo, J. V., 303
McCorkindale, J., 337
McCormick, D. B., 429, 448
McCorquodale, D. J., 102, 692
MacCoshan, V. T., 292
McCrea, J. F., 45, 49, 122, 124
McCulloch, E. A., 128
McCully, K. S., 35
McCurdy, H. D., Jr., 387
MacDonald, D. L., 160, 173, 174, 175
MacDonald, J. C., 369
McDougal, D. B., Jr., 521, 532, 568
McDougall, B. M., 186, 187, 189, 201, 202, 203, 204, 628
Mace, C. A., 542
McElroy, W. D., 402, 759
McEvoy, F. J., 166
McFall, E., 26
Macfarlane, M. G., 216, 217
McGarry, E. E., 251
McGavin, A. S., 277
McGeer, P. L., 374
McGinn, C. J., 158
McGinniss, G. F., 567
McGraw, J. C., 610
McGregor, D. N., 641
MacGregor, D. R., 721
McGregor, L. L., 356, 625
McGregor, M., 316
McGuire, J., 680, 682
Machlin, L. J., 262
Machlowitz, R. A., 133
McHugh, R., 659
McIlwain, H., 233, 234, 525, 526, 529, 543, 545, 559, 565
McInnes, A. G., 156, 157, 174
McIntosh, E. N., 420
Mackal, R. P., 43, 44, 113, 119, 147
Mackay, D., 389
Mackay, D. A. M., 737, 738
MacKay, O., 389
McKay, R. H., 627
McKee, J. S. M., 619, 620, 621, 622, 623, 624
McKeekin, T. L., 279
MacKellar, F. A., 156, 171
Mackenzie, C. G., 375, 616
McKenzie, D., 499
McKeown, G. G., 175
McKerns, K. W., 686
Mackler, B., 580, 591, 604
McLafferty, F. W., 757
McLaren, L. C., 134
McLaughlan, K. A., 156
McLean, A. E. M., 529, 530
McLean, P., 373
MacLennan, A. P., 172
McLennan, H., 557
MacLeod, C. M., 43
Macleod, H., 382, 391
MacLeod, R. M., 616
McManus, T. T., 258
McMillan, P. J., 290
McNally, S., 172
McNamee, P. I., 171
McNary, J. E., 171
McNelis, E., 650
McNickle, T. G., 243, 244
McNutt, W. S., 425
McPhee, J. R., 399
Macpherson, I. A., 129
McQuillen, K., 21
McShan, W. H., 677
McWain, P., 167
Maddock, K. M., 716, 719, 720, 721
Mader, P. P., 737
Madorsky, S. L., 756
Madsen, N. B., 331
Maestre, M. F., 95
Magalhaes, M. T., 730
Magasanik, B., 26, 465
Magdoff, B. S., 276
Magee, P. N., 73, 74
Magee, W. E., 122, 124, 473, 495, 496
Mager, J., 501
Magno, S., 688
Magnusson, P. H., 481, 489
Magoulas, J. P., 287
Maguire, M. H., 469
Mahadevan, S., 243
Maheshwari, N., 50
Mahler, H. R., 48, 56, 57, 58, 67, 68, 94, 97, 103, 106, 110, 579, 580, 596, 604, 619, 620, 624, 657
Mahler, W., 538
Maickel, R. P., 248, 738
Main, A. R., 661
Main, R., 51
Mainwaring, W. I. P., 278
Maio, J. J., 337, 567
Mairesse, N., 119
Maisen, J. H., 223

Maitland, H. B., 122
Maitra, U., 376
Maizels, M., 556, 557, 559
Makino, K., 389
Makita, A., 230
Makita, M., 717, 733
Malamy, M., 19, 20, 21, 73, 497, 498, 499, 696
Malec, J., 132
Maley, F., 202, 203, 337, 483, 486, 490
Maley, G. F., 202, 337, 425, 426, 428, 483, 490
Maling, B. D., 24
Maling, H. M., 247
Malins, D. C., 736
Maller, R. K., 343
Maloney, A. F. J., 230
Maloney, E. D., 140
Maloof, F., 411
Manchester, K. L., 341, 693
Mandel, B., 134
Mandel, H. G., 464, 465, 466, 468, 471, 474
Mandel, L. R., 22, 23, 24, 32, 206
Mandel, M., 47, 48, 57
Mandel, P., 336
Mandell, J. D., 30, 44, 51, 97, 98
Mandell, L., 157
Mandels, G. R., 406
Mandelstam, J., 326
Mandelstam, M. H., 325
Mangalo, R., 466
Mangiarotti, G., 344
Mangiarotti, M., 344
Mangiarotti, S., 629
Mangum, J. M., 209, 210
Mann, P. J. G., 617
Manner, P., 515
Mannering, G. J., 734, 739
Manners, D. J., 334
Mannick, J. A., 469
Manning, G. B., 333
Manning, J. M., 359
Mano, Y., 345, 441
Manolopoulo, M., 738
Mansour, J. M., 340
Mansour, T. E., 340
Mantieva, V. L., 31, 32, 50
Mantsavinos, R., 202
Mao, I. I., 160
Maquire, M. H., 174
Marchessault, R. H., 155
Marco, G., 262, 729
Marcus, A., 216, 601
Marcus, P. I., 681
Mardeshev, S. R., 420
Marfey, S. P., 291
Margoliash, E., 288, 584
Margolin, P., 368
Margolis, S., 263
Marinetti, G. V., 216, 217, 218, 222, 230, 363
Marini, M. A., 661
Marino, J. V., 471
Marion, L., 444
Mariz, I. K., 375
Markees, D. G., 475
Markert, C. L., 627
Markey, A., 302
Markham, R., 33, 89, 119, 120
Märki, F., 610
Markovitz, A., 322, 326, 328
Marks, N., 234, 525
Marks, P. A., 686
Marmur, J., 22, 31, 44, 47, 48, 49, 52, 53, 54, 55, 56, 57, 60, 61, 62, 63, 70, 71, 72, 73, 91, 100, 118
Marnati, M. P., 452
Marquez, F., 167
Marr, A. G., 257, 722
Marroquin, R., 74
Marsh, J. B., 258, 260, 723
Marsh, M. M., 294
Marsh, R. E., 276
Marshall, E. K., 194
Marshall, J. K., 567
Marshall, L. M., 158
Marshall, M., 371
Marshall, N. B., 247
Marshall, R. G., 469
Martell, A. E., 650
Martin, A. J. P., 713, 717, 727, 743, 745
Martin, A. P., 683
Martin, A. V., 51
Martin, C. J., 456
Martin, D. B., 253, 254, 661, 722
Martin, D. S., 468
Martin, E. M., 132
Martin, H. F., 719, 733
Martin, J. H., 477
Martin, N., 303, 305
Martin, R. B., 24, 668
Martin, R. G., 490, 499, 501, 689, 694
Martin, R. O., 325
Martin, W. R., 368
Martinez, F., 656
Martinez, R. J., 381
Martius, C., 610
Martlew, E. F., 172
Maruo, B., 17
Maruyama, K., 679
Marvin, D. A., 54, 55
Mashiah, P., 122
Masi, I., 343
Mason, H., 607
Mason, L. H., 718
Mason, M., 189, 190, 197, 363, 380, 687
Mason, R., 657
Mason, W. B., 734
Masoro, E. J., 241, 253, 256
Massey, V., 579-638; 391, 399, 579, 584, 596, 599, 601, 606, 607, 608, 609, 615, 616
Massini, P., 346
Masson, F., 54, 64, 68
Mastokalas, N., 312
Masuda, T., 425, 426, 428, 429
Masui, M., 651
Matheson, A. T., 98
Mathews, C. K., 110, 186, 187, 201, 202, 203, 205, 206
Mathias, A. P., 422
Mathieu, C., 729
Mathison, D., 563
Matsubara, H., 584, 588
Matsubara, K., 51, 114
Matsubara, S., 161
Matsuda, G., 303, 305, 308
Matsuda, M., 386, 389
Matsuhashi, M., 256
Matsukawa, T., 646
Matsumoto, M., 389
Matsuo, Y., 411
Matsushiro, A., 377
Matsuzawa, T., 385
Mattern, C. F. T., 129, 135
Matthaei, J. H., 24, 120, 490, 499, 500, 694, 695
Matthews, D. M., 569, 570
Matthews, J. S., 721
Matthews, L., 57, 60, 70, 71, 72, 91
Matthews, R. E. F., 87, 464, 468, 470, 474, 475, 476, 484, 485
Mattson, F. H., 242
Maung, K., 334
Maurer, P. R., 338
Maurey, J. R., 554, 559
Maxwell, E. S., 677, 708; 500, 628, 652, 680, 685, 686, 694, 695
May, E. L., 737
Mayahi, M. F., 654
Mayer, V., 140
Mayfield, H. L., 247
Maynard, J. M., 580
Mayor, H. D., 129, 133, 136
Mazliak, P., 725, 732
Mead, J. A. R., 206, 480
Mead, J. F., 241-68; 242, 251, 254, 255, 262, 263, 722, 730
Medina, M. A., 389
Mehler, A. H., 698
Mehrota, B. D., 56, 57, 58
Mehta, N. C., 155
Meienhofer, J., 290
Meijer, J. W. A., 717
Meiklejohn, A. P., 532
Meinertz, H., 718
Meinhart, J. O., 341, 342

Meister, A., 193, 358, 359, 366, 375, 408, 416, 476, 478, 600, 601, 728
Melamed, M., 729
Melander, L., 657
Melani, F., 371
Melby, L. R., 538
Melechen, N. E., 118
Melgarejo, M., 167
Mellanby, J., 629
Melnick, I., 476, 696
Melnick, J. L., 127, 129, 133, 134
Meloche, H. P., 343
Meloni, M. L., 380
Melville, D. B., 374, 399, 456
Mendeloff, A. I., 717
Mendicino, J., 158, 341
Menefee, B. S., 737
Menefee, E., 538
Menefee, M. G., 136
Menon, G. K. K., 250, 690
Menon, T., 331
Menshikh, L. K., 401
Mentzer, C., 167
Mercer, E. I., 241
Mercier, D., 730
Mercuri, O., 255
Merits, I., 734
Meriwether, B. P., 627
Merkl, I., 222
Merola, A. J., 35, 37, 432
Merola, L. O., 336
Merrifield, R. E., 538
Merrill, S. H., 28, 29, 35, 36
Merritt, C. R., 529, 554, 559, 741
Meselson, M., 46, 47, 48, 50, 60, 64, 90, 105, 117, 292
Messerly, J. P., 711
Metcalf, W., 691
Metcalfe, L., 717, 721
Metzger, H., 294
Metzler, D. E., 365
Meyer, F., 43, 44, 113, 147
Meyer, K., 334
Meyer, M., 188
Meyer, R. K., 677
Meyer, W. E., 494, 497
Meyerhoff, O., 653
Meyering, C. A., 302
Meyers, C. E., 138
Meyer zu Reckendorf, W., 163, 164, 168, 171, 172
Michael, R., 695
Micheel, F., 155, 158, 162, 168
Michels, J. A., 375
Michelson, A. M., 174, 490
Midgley, J. E. M., 35
Migliacci, A., 452, 453
Miki, M., 724, 730
Mikolajczak, K. L., 722
Miksch, J., 168
Mikumo, K., 386
Mildvan, A. S., 357, 626
Miles, H. T., 741
Miljanich, P., 250
Millar, D. B. S., 342, 627
Millar, R. W., 287
Miller, B., 101, 111, 491, 656
Miller, D. M., 563
Miller, F., 536
Miller, H., 246, 248
Miller, I. M., 452
Miller, I. R., 56
Miller, K. J., 170
Miller, O. V., 124, 495, 496
Miller, P. A., 527
Miller, R. W., 469
Miller, S. L., 533
Mills, G. C., 406
Mills, G. T., 322, 326, 327, 334
Mills, R. C., 610
Milne, G. W. A., 641
Milun, A. J., 734
Minagawa, T., 103, 108
Minakami, S., 580, 596
Minghetti, A., 452
Mingioli, E. S., 207
Minnaert, K., 587
Minnemeyer, H., 381
Minnich, V., 311, 312
Miras, C. J., 734
Mirsky, A. E., 31, 32, 50, 51, 286
Mirsky, I. A., 248, 413
Misra, D., 186, 187, 188, 189, 206
Mistry, S. P., 335
Mital, H. C., 162
Mitani, S., 599
Mitchell, D. G., 726
Mitchell, H. K., 435
Mitchell, P., 514, 556
Mitchell, W., 726
Mitoma, C., 376
Mitra, A. K., 175
Mitsuda, H., 426, 427, 428
Mitsui, H., 30, 50, 105, 464
Mitsumoto, M., 345
Mittleman, F. A., 286
Miura, K., 34, 35
Miwa, T. K., 723, 725, 730
Miyoshi, T., 374
Mize, C. E., 401, 617
Mizell, L. R., 291
Mizuno, D., 34
Mizuno, K., 428
Mizuno, N., 500
Mizushima, H., 584
Mizutani, H., 138
Mjos, K. J., 477
Moat, A. G., 360
Mochel, W. E., 538
Modi, V. V., 335
Mody, U., 73
Moelwyn-Hughes, E. A., 546
Moffatt, J. G., 173
Moir, R. Y., 156
Mokrasch, L. C., 515
Molinari, R., 611
Möller, E., 421, 642
Molnar, D., 432, 433
Molyneux, P., 644
Mondovi, B., 407, 409, 410, 422
Moniz, R., 532
Monod, J., 18, 24, 48, 116, 570, 571, 695, 697
Monroe, R. E., 734
Montgomery, J. A., 464, 467, 468, 470, 475
Montgomery, R., 155
Montreuil, J., 230, 323
Moohr, J. W., 17, 51
Moon, H. D., 256
Moo-Penn, G., 570
Moore, C. V., 311, 312
Moore, D., 129, 131, 133, 718
Moore, E. C., 472
Moore, J. E., 290
Moore, R. H., 155
Moore, S., 289, 290
Moore, T., 263
Moorman, J. A., 488
Mor, M. A., 679
Mora, P. T., 96
Morawetz, H., 640, 641, 643
Morel, C. J., 168
Moreland, H., 311
Morell, D. B., 602
Moret, V., 338, 581
Moretti, A., 328
Morgan, C., 122, 124, 127, 136
Morgan, D. G., 739
Morgan, H. E., 567, 568, 569
Morgan, H. R., 467, 475
Morgan, W. T. J., 644
Mori, B. G., 410
Morieson, A. S., 724
Morino, Y., 449, 450
Morisue, T., 449, 450
Morita, S., 593
Moritaka, S., 426
Moriwaki, T., 347
Morris, A., 175, 500
Morris, H. P., 502
Morris, J. G., 447
Morris, L. J., 723
Morris, N. R., 488
Morrison, R. L., 724
Morrison, W. R., 723
Morrissette, R. A., 725, 727
Morrow, P. F. W., 580
Morse, P. A., Jr., 483
Morse, S. I., 102

Mortenson, L. E., 618
Morton, R. K., 465, 470, 612
Moscatelli, E. A., 334, 717, 727, 728
Moser, H., 442
Moser, L., 499
Moses, V., 338
Mosettig, E., 734
Mosher, H. S., 156, 171
Mothes, E., 444
Mothes, K., 444
Moulder, J. W., 122
Moustafa, E., 360
Mowat, J. H., 477, 494, 497
Mowery, D. F., Jr., 162
Moye, C. J., 428
Moyed, H. S., 374
Moyle, J., 556
Mudd, J. B., 258, 259
Mudge, G. H., 557
Mueller, G. C., 139, 500, 691, 692, 693, 696, 697
Mueller, J. F., 245
Mueller, P. S., 248
Muetgeert, J., 155
Muhlbachova, E., 247
Muirhead, H., 274, 281, 308, 310, 315
Mukai, F., 101, 111, 491
Mukherjee, K. L., 488, 490
Mulder, I., 218
Mullaney, M., 558
Muller, C. J., 303, 305, 311, 312
Muller, E., 454
Müller, O., 175, 454
Muller, S., 721
Müller, V. M., 20
Müller, W., 19, 20, 497, 498
Mumma, R., 156
Munck, A., 692
Munck, O., 558, 563
Munday, J. S., 678
Munyon, W., 135, 487
Murad, F., 331
Murakami, H., 290
Murakami, W. T., 63, 100, 108
Murayama, M., 311
Murphy, J. S., 102
Murphy, R. P., 157
Murray, A. W., 470
Murray, K., 168
Murray, K. E., 722, 725, 732, 745
Murray, P. J., 724
Murthy, S. K., 243
Murty, N. L., 250, 255, 260, 716
Musacchio, M., 383
Musgrave, B., 718
Musher, J. I., 157
Musser, E. A., 494
Myers, W. F., 363
Myhre, D. V., 164
Mysels, K. J., 293

N

Nachmansohn, D., 648
Nadler, S. B., 468, 469, 471
Nagel, C. W., 334
Nagington, J., 133
Nagler, C., 65, 114
Nagy, B., 661
Nair, P., 516
Najjar, V. A., 648
Nakabayashi, N., 499
Nakae, T., 721
Nakagawa, H., 22
Nakai, M., 605
Nakai, N., 592
Nakamoto, T., 16, 17, 25, 50, 51, 104, 409, 411, 487, 561
Nakamura, K., 628, 647
Nakamura, M., 136
Nakamura, S., 378
Nakamura, T., 409
Nakanishi, T., 721
Nakata, A., 19, 73, 108, 498, 499
Nakata, K., 494, 495, 496
Nakata, Y., 494, 495, 496
Nakayama, H., 441, 442, 628
Nakayama, K., 365
Nakayama, T., 593
Nakayama, Y., 426, 427, 428
Nánási, P., 168, 169
Naono, S., 18, 486, 487
Nara, T., 365
Narahara, H. T., 404
Narahashi, Y., 290
Narasimhachari, N., 738, 741
Narita, K., 584
Narrod, S. A., 478
Nash, C. P., 650
Nason, A., 594
Nath, M. C., 249, 256, 345
Nath, R., 186, 187, 201, 202, 204, 628
Nathan, H. C., 472
Nathans, D., 115, 499
Nathenson, S. G., 325
Naukkarinen, T., 734
Naves, R. G., 171
Naves, Y., 725, 726, 730, 731
Nazarian, G. M., 292
Neame, K. D., 569, 570
Neel, J. V., 313, 316
Neely, W. B., 660
Neilands, J. B., 342
Neims, A. H., 362, 391, 600
Neligan, R. E., 737
Nelson, C. A., 288
Nelson, D. R., 619, 620
Nelson, G., 739
Nelson, G. J., 216
Nelson, J. P., 734
Nelson, W. O., 420
Nemes, M. M., 140
Nemeth, A. M., 378, 500
Némethy, G., 57, 282, 283, 284, 286, 534, 535, 661
Neptune, E. M., Jr., 263
Nerdel, F., 731
Nesburn, A. B., 140
Ness, R. K., 160
Nester, E. W., 109
Nestle, P. J., 244
Netter, H., 556
Neuberger, A., 363, 365, 367
Neubert, D., 413, 414
Neufeld, E. F., 321, 322, 324, 337, 338, 346, 681
Neufeld, H. A., 407, 683
Neuhard, J., 678
Neuhaus, F. C., 391, 646
Neukom, H., 157
Neumann, H., 662, 663
Neumann, J., 360
Neuss, N., 502
Neveu, M. C., 640, 657
Newburgh, R. W., 216
Newman, D. W., 263
Newmark, P., 485
Newmeyer, D., 372
Newsholme, E. A., 340, 341
Newton, A. A., 127
Newton, J. W., 415
Newton, W. A., 377
Ng, Y. L., 726
Nichol, C. A., 185, 187, 188, 189, 190, 198, 206, 386, 628, 702
Nicholaides, N., 759
Nicholas, D. J. D., 592, 594, 595
Nicholls, D., 564, 566
Nichols, A. V., 249
Nickell, C., 722, 736
Nickerson, W. J., 327, 391, 405
Nicolaides, N., 516, 722, 727, 730
Nicolaieff, A., 54, 276
Nielsen, H., 441
Niemeyer, H., 332
Nigam, V. N., 172
Nihei, T., 37, 295, 660
Nikaido, H., 322, 325, 531, 572
Nikitin, V. N., 48
Nikolaeva, N. V., 54
Nilsson, M., 759
Nimz, H., 160, 161
Ning, C., 17, 104
Nirenberg, M. W., 24, 120, 490, 499, 500, 501, 661, 694, 695

Nishi, Y., 137, 138
Nishida, H., 172
Nishikuza, Y., 378
Nishimura, J., 359, 365
Nishimura, S., 34
Nishimura, Y., 449
Nishizuka, Y., 421
Nisman, B., 17
Nisselbaum, J. S., 627
Niven, J. F., 122, 128
Nixon, H. L., 121
Noall, M. W., 690
Nobili, F., 380
Noble, E. P., 336
Noda, L., 295, 660
Nojima, S., 728
Noll, H., 112, 138
Noltman, E. A., 627
Nomoto, J., 134
Nomoto, M., 290
Nomura, M., 22, 25, 50, 69, 91, 104, 105
Nord, F. F., 738
Nordin, J. H., 329
Noronha, J. M., 185, 210
North, A. C. T., 95, 274, 276, 281, 308, 310, 315
North, E. A., 527
Northrop, J. H., 67, 68, 107
Norton, P. M., 369
Norton, S. J., 360
Norton, W. T., 226
Nose, T., 438
Nose, Y., 438
Notani, G., 115
Notton, B. M., 216, 218
Novelli, G. D., 17, 371, 422, 424, 425
Novick, A., 73
Novoa, W. B., 370, 627
Novosel, D., 122
Nowak, H., 291
Nowell, J. F., 647
Nowinsky, W. W., 340
Noyes, W. F., 215
Nozaki, M., 584
Nozaki, Y., 275, 294
Nukada, T., 562, 564
Numa, S., 256
Nunez-Montiel, O., 136
Nyc, J. F., 221
Nygaard, A. P., 597, 599, 613, 622
Nys, M., 162
Nystrom, R. F., 718

O

O'Brien, C., 312
O'Brien, J., 516
O'Brien, J. R. P., 304
O'Brien, J. S., 185, 479
O'Brien, P. J., 321, 322, 325
Ochiai, H., 162
Ochoa, S., 24, 50, 490, 499, 532, 694
O'Connell, E. L., 657
O'Connor, R. J., 628
O'Connor, R. T., 155
Oda, T., 537
O'Dell, B. L., 203, 431
Oesper, P., 342
Oette, K., 219, 721, 722
Ofengand, J., 120
Oftedahl, M. L., 169, 174
Ogston, A. G., 558, 559
Ohgo, Y., 169
Ohkubo, T., 340
Ohlogt, G., 731
Ohnishi, E., 391
Ohno, K., 728
Ohno, M., 390
Ohno, Y., 161
Oishi, M., 17
Okada, M., 386
Okamoto, K., 22, 25, 105
Okazaki, R., 323
Okazaki, T., 323
Okey, R., 250
Okubo, S., 496
Okuda, S., 738
Okun, L., 70, 72, 73, 492
Okunuki, K., 390, 582, 584, 585, 587, 588, 592, 594, 595, 605
Olavarría, J. M., 329, 333
Olcay, A., 738
Oldfield, J. F. T., 334
O'Leary, J. L., 534
O'Leary, W. M., 257, 722
Oleson, J. J., 477, 499, 501
Oliver, I. T., 333
Oliver, J. O., 557
Olomucki, A., 372
O'Loughlin, J., 122
Olsen, C. W., 650
Olson, J. A., 625, 683
Olson, R. E., 381
Omura, T., 592
O'Neal, M. A., 500
O'Neal, M. J., Jr., 762
O'Neill, J. J., 656
Onishi, H., 338
Ono, H., 724, 730
Onodera, K., 162, 163, 168, 171
Ooi, T., 390, 391, 600
Ooi, Y., 389
Oosterbaan, R. A., 647
Oota, Y., 464
Opara-Kubinska, Z., 70, 492
Opsahl, P. M., 694
Oram, J. D., 102
Orego, A., 110
Oreskes, I., 640
Orgel, A., 67, 68, 69, 95, 491
Orii, Y., 587
Orlando, J., 138
Orlando, J. A., 593
Orlando, J. M., 539
Orlando, R. A., 539
Orloff, J., 559
Orloff, M. K., 538
Orlova, O. K., 157
Ormand, W. L., 736
Orrell, S. A., Jr., 332
Ortega, M. V., 444
Ortiz, P. J., 21, 104, 106, 107, 115
Osaki, H., 554, 559, 571
Osawa, S., 30, 31, 50, 105, 464, 500
Osbahr, A. J., 295
Osborn, M. J., 185, 186, 189, 190, 194, 196, 197, 198, 326, 480
Osiecki, J. H., 165
Ossorio, R. P., 656
Osteux, R., 366
Ostwald, R., 250
Ota, A., 588, 594, 595
Otaka, E., 30, 50, 464, 500
Oth, A., 47
Otsuji, N., 118, 496
Otsuka, S., 595
Ott, H., 164
Ott, W. H., 334
Ottenstein, B., 230
Ottesen, M., 303
Otting, W., 155
Ottolenghi, P., 335
Otvos, J. W., 713
Ove, P., 466, 470, 474, 475
Overbeek, J. T. G., 654
Overend, W. G., 158, 159, 173
Overgaard-Hansen, K., 476, 489
Oxman, M. N., 253
Ozawa, T., 390, 391, 599, 600, 661
Ozeki, H., 442

P

Pacák, J., 160
Packer, L., 677
Packter, A., 642
Pacsu, E., 175
Padberg, G., 230
Paerels, G. B., 160
Page, A. C., 581
Page, I. H., 248
Page, L. B., 557, 558
Pahl, H. B., 51
Paigen, K., 22, 117, 340
Paik, W. K., 484
Pain, J., 741
Paine, C. M., 570
Painter, T. J., 644
Paiva, A. C. M., 288

Palade, G. E., 555
Palay, S. L., 555
Paleus, S., 584
Palmer, E. A., 466
Palmer, G., 391, 599, 601, 604, 605, 607, 608, 609, 615
Palmer, R. A., 277
Pamiljans, V., 193, 358, 359
Pandit, U. K., 640
Pantages, P., 719
Pao, Y., 538
Paoletti, R., 248
Papa, S., 373
Papaspyrou, A., 312
Papirmeister, B., 93
Pappajohn, D., 216, 217
Pappas, G. D., 517
Pappas, N. A., 737
Pappenheimer, A. M., Jr., 327
Pappius, H. A., 557
Paquot, C., 725
Parcell, A., 668
Pardee, A. B., 22, 67, 70, 95, 106, 430, 447, 490, 491, 689, 697
Paretsky, D., 122, 363
Park, C. R., 347, 413, 554, 567, 568, 569
Park, J. H., 627
Park, R. B., 346
Park, R. J., 727, 732
Párkányi, C., 484
Parker, H., 660
Parker, K. D., 728, 739
Parkins, G., 68
Parks, R. E., Jr., 464, 465, 468, 469, 472, 473, 474, 475, 485, 488, 696
Parsons, D. S., 555, 557
Partridge, S. M., 157
Pasero, L., 242
Passmore, R., 532
Passonneau, J. V., 340, 341, 520, 521, 532
Pasternak, C. A., 482
Pastore, E. J., 199, 201, 202, 203, 204, 206
Patchornik, A., 290, 652
Paterson, A. R. P., 468, 470, 471, 473, 477
Patlak, C. S., 563
Patrick, A. D., 406
Patrick, J. B., 494, 497
Pattabiraman, T. N., 337
Patte, J. C., 367
Pattermann, F., 653
Patterson, W. I., 291
Patton, S., 727, 738
Paul, H. L., 121
Paul, J., 466, 486, 487
Paul, R. M., 374
Pauling, L., 271, 286, 301, 303, 533
Pauls, F., 569
Paulson, H., 168
Paulus, H., 221
Paulus, W., 428
Pawan, G. L. S., 248
Pawelkiewicz, J., 452
Paxhkis, K. E., 696
Pazur, J. H., 322, 324, 326, 333, 337
Peacocke, A. R., 54, 158
Pearce, J. H., 338
Pearl, I. A., 738
Pearse, A. G. E., 342
Pearson, F. G., 155
Pearson, H. A., 303, 314
Pearson, R. G., 647, 651
Peck, D. W., 648
Peck, H. D., Jr., 399, 403, 653
Pedersen, K. J., 649
Pederson, C., 160, 161, 162, 167
Peel, J. L., 407
Peer, H. G., 642
Peeters, E. M., 385
Peeters, G., 258, 260, 264, 334
Pei-Hsing, L. W., 444
Peisach, J., 374
Pelick, N., 736
Pellegrino de Iraldi, A., 517, 522
Peller, L., 668
Pelzer, H., 101
Penefsky, H. S., 589, 661
Pepper, J. M., 738
Pereira, H. G., 122, 126
Perel, J. M., 162
Perényi, L., 643
Perez, A., 130, 466, 467, 487
Perila, O., 735
Perisutti, G., 413
Perkins, E. S., 493
Perkins, H. R., 157, 488
Perlin, A. S., 159, 161, 162, 163
Perlmann, G. E., 271
Perlmutter-Haymann, B., 159
Perrett, R. H., 717
Perry, H. M., 726
Perry, J., 73
Perry, M. B., 157, 159, 171, 174, 735
Perry, W. F., 247
Pershin, G. N., 469
Persky, A., 159
Personeus, G., 499
Persyn, A., 732
Pert, A. H., 302
Perun, C., 740
Perutz, M. F., 274, 278, 279, 280, 281, 305, 308, 310, 315
Pesch, L., 681, 682, 685
Peterkofsky, A., 346, 374, 454, 663
Peters, D., 122, 125
Peters, E. L., 290
Peters, J. M., 186, 196, 399, 608
Peters, R. A., 532, 723, 740
Petersen, G. B., 52, 360
Petersen, R. C., 655, 657
Peterson, H., 168
Petrack, B., 415
Petrowitz, H. J., 731
Pette, D., 340
Pettersen, E., 738
Pettersson, R., 603
Pfannmüller, H., 290
Pfau, C. J., 45, 49, 124
Pfeifer, A., 332
Pfeifer, M., 160
Pfeil, E., 160
Pfiffner, J. J., 203, 431
Pfleiderer, G., 422
Pflueger, E. M., 111
Philipson, L., 30, 44, 51, 102, 133
Phillips, A. P., 640
Phillips, D. C., 269, 276, 307, 308, 310, 314
Phillips, D. D., 739
Phillips, M. A., 477
Pho, D. B., 372
Pichappa, C. V., 447
Pickworth, J., 450
Pidacks, C., 494, 497
Piekarski, L. J., 124, 496
Piel, W., 161
Pierce, J. G., 33, 36
Pierce, J. V., 171
Pieringer, R. A., 222, 564, 699
Pierpont, W. S., 422
Pietruszko, R., 225
Pietrzykowska, I., 118
Pigman, W., 164, 171
Pignataro, E. H., 276
Pigon, A., 523, 524
Pihl, A., 404
Pileri, A., 702
Pina, M., 124, 125, 126
Pinamonti, S., 581
Pinkerton, M., 276
Pinus, E. A., 340
Piper, E. A., 719
Piros, K., 681
Pisano, J. J., 728, 729
Píškala, A., 484
Pittet, A. O., 157, 162
Pittillo, R. F., 479
Pittoni, A., 248
Pitts, J. D., 211, 363
Pitzer, K. S., 156
Pizer, L. I., 106, 108, 109, 191, 192
Plane, R. A., 619, 624
Planterose, D. N., 136
Plaut, G. W. E., 419, 425, 426, 427, 428, 429, 441, 452, 646

Pledger, R. A., 136
Pletscher, A., 389
Pocchiari, F., 343
Pocker, Y., 655
Podovski, E. P., 570
Pogell, B. M., 345, 449
Pohjanpelto, P., 133
Polatnick, J., 136
Polgar, L., 101
Poljak, R. J., 276
Pollar, M., 122
Pollard, G. E., 739
Pollard, M., 490
Pollmann, W., 155
Pollock, E. J., 657
Polonsky, J., 764, 768
Polson, A., 87
Pomales, R., 471
Pomerantz, S. H., 777
Pon, N. G., 346
Pontis, H., 481, 485
Pontremoli, S., 344, 629, 649
Pope, A., 519, 543
Popenoe, E. A., 347, 412, 413
Popiel, W. J., 158
Popják, G., 718, 722, 725, 777
Popov, A. I., 539
Popova, I. A., 333
Porter, C. A., 121
Porter, E., 253, 256
Porter, F., 775
Porter, J., 332
Portugalov, V. V., 518, 524
Posner, I., 421
Post, R. L., 529, 554, 556, 559, 567, 568, 569
Postlethwaite, R., 122
Poston, J. M., 648
Potgieter, D. J. J., 174
Potter, L. T., 514, 524
Potter, V. R., 483, 502
Pottinger, P. K., 333
Potts, J. T., 289
Pouliot, G., 376
Poulter, G. A., 389
Pourchez, A., 725
Pour-El, A., 59
Powell, W. F., 500
Power, U., 356, 625
Powning, R. F., 401, 405
Prandini, B. D., 344
Pratt, D., 95, 103
Pratt, E. A., 99, 112
Preiss, J., 21, 334, 344, 445, 478
Prelog, V., 644
Pressman, D., 416
Prestidge, L. S., 22, 106
Price, C. A., 614
Price, G. M., 355
Price, J. M., 380
Price, K. E., 477, 493
Price, R. G., 155
Price, W. C., 54, 55
Pricer, W. E., 193, 196, 197, 564
Priddle, J. E., 155, 157, 174
Pridham, J. B., 162
Prill, E. A., 738
Primosigh, J., 101
Prins, H. K., 302, 313
Prinzie, A., 30, 134
Přistoupilová, K., 480
Pritchard, E. T., 232
Privett, O. S., 722, 736
Probst, G. W., 140
Prockop, D., 375
Prosen, R. J., 450
Proskuryakov, N. I., 401
Prox, A., 728
Prunieras, M., 127
Prusoff, W. H., 70, 71, 485, 486, 490, 492, 493
Pryde, E. H., 722
Prystas, M., 484
Pugh, L. H., 19
Pullman, A., 56
Pullman, B., 56
Pullman, M. E., 661
Pumphrey, A. M., 583, 591
Purcell, R. H., 131
Purko, M., 420
Purnell, H., 709
Purnell, J. H., 717
Purpura, D. P., 517
Purvis, J. L., 589, 592
Puskas, M., 169

Q

Quastel, D. M. J., 545
Quastel, J. H., 343, 545, 556, 568, 569, 677
Quayle, J. R., 629
Quin, L. D., 737
Quin, P. M., 737
Quinnelly, B. G., 479

R

Rabinovitz, M., 500, 501
Rabinowitz, J. C., 185, 186, 189, 190, 193, 194, 195, 196, 197, 431
Rabinowitz, M., 20, 21, 23, 73, 324, 495
Rabkin, M. T., 481
Rabson, R., 362
Racker, E., 344, 346, 403, 404, 646, 661, 680
Rada, B., 140, 484
Radding, C. M., 56, 66
Radford, L. E., 292
Radhakrishnan, A. N., 368
Radin, N., 230, 254, 723
Radnee, B. S., 466
Rafelson, M. E., Jr., 138
Ragni, G., 70, 467, 470, 492
Rai, K., 380
Raijman, L., 372, 661
Rajagopalan, K. V., 447, 604, 605, 607, 615
Rajalakshmi, S., 447
RajBhandary, U. L., 325
Rakoff, H., 255, 260
Rall, T. W., 331
Ralph, R. K., 35
Ramakrishnan, T., 343, 387
Ramasarma, T., 581
Ramasastri, B. V., 197, 628
Ramirez, M. I., 738
Ramot, B., 343
Ramponi, G., 371
Ramsey, J. C., 343
Ramshaw, E. H., 726
Randall, C. C., 48, 124
Randall, H. M., 172
Randall, J. J., 655
Randall, R. J., 520
Randle, P. J., 340, 341, 567, 693
Ranney, H. M., 312, 315
Rao, D. R., 342, 366, 444
Rao, K. V., 477, 497
Rao, N. A., 429, 580
Rapaport, S. A., 71
Raphael, R. A., 711, 732
Rapin, A. M. C., 174
Rappoport, D. A., 172
Rapport, M., 226, 230, 728
Rasmussen, A. F., Jr., 138
Rasmussen, H., 347, 412, 413
Rasper, J., 285, 286
Rauchs, E., 389
Rauen, H. M., 20, 73, 494, 495, 498
Raval, D. N., 619
Ravel, J. M., 360
Ravin, A. W., 43
Ray, W. J., Jr., 24
Razzell, W. E., 35
Recondo, E., 322, 329, 332
Recourt, J. H., 711, 727
Reda, I., 137
Redcliffe, A. H., 732
Reddi, K. K., 33
Reddy, J. M., 276
Redfearn, E. R., 581, 591, 606
Redfield, B., 454
Redfield, R. R., 289
Redlich, O., 287
Reed, L. J., 399, 590, 607, 650
Reed, N. D., 113
Reed, R. I., 757, 762, 771
Rees, A. W., 291
Rees, C. W., 159
Rees, D. A., 327
Rees, M. W., 95, 97
Reese, C. B., 159

Reeves, J. L., 389
Reeves, R. E., 158, 567
Reeves, R. L., 643
Refsum, H. E., 558, 563
Regen, D. M., 569
Rehm, W. S., 554, 558
Rehnborg, C. S., 249
Reich, E., 19, 21, 51, 73, 132, 494, 495, 496, 497, 498, 499, 696
Reichard, P., 481, 485, 488, 489
Reichl, D., 248
Reichstein, T., 157, 160
Reid, E., 502
Reid, J., 169, 389
Reid, M. R., 477, 479
Reid, P. E., 164
Reid, W. K., 771
Reilly, H. C., 479
Reim, M., 340
Reinheimer, J. D., 642
Reinwein, D., 568, 569
Reiser, R., 250, 255, 260, 744
Reish, J. J., Jr., 263
Reiss, O. K., 626
Reissig, M., 128, 487, 494, 496
Reist, E. J., 165, 171, 174
Reiter, B., 102
Reith, A. R., 477
Reithel, F., 286, 627
Rem, L. T., 611
Rembarz, G., 160
Remington, M., 556, 557, 559
Remmert, L. F., 590
Remy, C. N., 474
Renard, M., 729
Rendig, V. V., 172
Rendina, G., 421
Renis, H. E., 124
Renkonen, O., 225
Renner, R., 243
Renold, A., 692
Renshaw, A., 216, 218, 557, 558
Renson, J., 380
Reschke, R. F., 711
Retson, M. E., 722
Revel, H. R., 116
Revesz, L., 481, 489
Reyerson, L. H., 659
Reynolds, J. G., 739
Reynolds, J. J., 419-62; 435, 436, 437
Reynolds, M. A., 521, 532
Reynolds, P. E., 326
Rhim, J. S., 136
Rhind-Tutt, A. J., 161, 651
Rhinesmith, H. S., 303
Rho, J. H., 50
Rhodes, C. K., 276
Ricci, C., 344, 649
Rice, R. V., 119
Rice, S. A., 57
Rich, A., 95, 277, 658
Rich, M. A., 130, 466, 467, 487
Richards, F. J., 390
Richards, F. M., 269-300; 278, 279, 281, 286, 289, 293
Richards, O. C., 341, 342
Richardson, A. C., 170, 175
Richardson, G. S., 693
Richardson, K. C., 514, 524
Richardson, K. E., 615
Richert, D. A., 363
Richter, A. 137
Richter, J. W., 172
Richtmyer, N. K., 172
Rickborn, B., 657
Rickenberg, H. V., 337, 567
Rickes, E. L., 140, 334, 431
Ridd, J. H., 651
Riedel, A., 663
Rifkind, R. A., 136
Riggs, A., 315, 316
Riggs, J. L., 122
Riggs, T. R., 690
Rigler, N. E., 477
Rigopoulos, N., 346
Riklis, E., 568
Riley, M., 117
Riley, V., 130, 131
Rilling, H. C., 777
Rimmer, A. D., 248
Rimon, A., 343
Rinehart, K. L., Jr., 156, 171
Ring, R. N., 663
Ringler, R. L., 580, 596, 616
Ripninsky, G. A., 291
Rippa, M., 612, 613
Risebrough, R. W., 21, 32, 50
Rizack, M. A., 248
Rizvi, S., 96
Roane, P. R., Jr., 127
Robbins, P. W., 116, 326, 399
Robbins, W. E., 734
Robert, M., 775
Roberts, D., 198, 201
Roberts, E., 513-52; 420, 421, 514, 515, 518
Roberts, J., 326
Roberts, N. R., 520, 521, 702
Roberts, R. B., 21, 22
Roberts, W. K., 34, 119
Robertson, A. M., 334
Robertson, G. L., 693
Robertson, J. D., 535
Robertson, J. M., 450
Robins, E., 520, 521
Robins, R. K., 437, 474
Robinson, A. R., 302, 313
Robinson, B., 389
Robinson, C. W., 244
Robinson, D. A., 610
Robinson, D. S., 247
Robinson, E., 311
Robinson, F. M., 140
Robinson, H. B., 243
Robinson, J. C., 611
Robinson, J. R., 557
Robinson, M. A., 226
Robinson, R., 644
Robinson, W. G., 421
Robson, M., 302
Roche, J., 695
Rock, M. K., 520
Rockenbach, J., 24
Rodin, J. O., 172
Rodnight, R., 525, 545
Rodriguez de Lores Arnaiz, G., 517, 522
Rodwell, V. W., 366
Roehm, R. R., 247
Rogers, A. W., 734
Rogers, H. J., 326, 488
Rogers, P., 371
Rogers, S., 129
Rohling, S., 248
Röhm, E., 526, 527
Roitman, E., 369
Roizman, B., 127, 137
Rolfe, R., 47, 52, 64
Rolland, M., 382, 383
Rolle, L. A., 726
Romano, A. A., 477
Romano, A. H., 405
Romenskaya, E. P., 157
Romig, W. R., 43, 115
Roodyn, D. B., 464, 466
Roosa, R. A., 466, 467, 468, 480
Root, J. W., 718
Rosado, A., 502
Rose, A., 327, 736
Rose, F. A., 155
Rose, H. M., 122, 124, 127, 136, 138
Rose, I. A., 646, 657
Rose, S. P. R., 529
Rose, Z. B., 646
Rosebrough, N. J., 520
Rosell-Pérez, M., 329
Roseman, S., 169, 173, 322, 337, 478
Rosen, F., 386, 702
Rosen, H., 122
Rosen, S. M., 326
Rosenberg, A., 230, 235
Rosenberg, B., 16, 45, 46, 63, 64, 539
Rosenberg, L., 570, 692
Rosenberg, T., 553, 567, 568
Rosenbergova, M., 140, 484
Rosenblatt, D. H., 656
Rosenblum, C., 452, 453

Rosenfeld, E. L., 333
Rosenfeld, R. S., 734
Rosengreen, B. K., 734
Rosengren, A. M., 389
Rosengren, B., 522
Rosengren, E., 389
Rosenkranz, H. S., 51
Rosenthal, S., 97, 198, 199, 207, 209, 210, 431
Rosoff, M., 51
Ross, K. M., 164
Ross, L. O., 291
Ross, S. D., 642, 655, 657
Ross, W. C. J., 501
Rossi, C. R., 248
Rossi, F., 343
Rossi, G., 401, 629
Rossi-Fanelli, A., 315, 316
Rossiter, R. J., 220, 263
Rossmann, M. G., 274, 281, 308
Rosso, R. G., 702
Rossotti, F. J. C., 655
Roth, W., 164, 171
Rothberg, S., 698
Rothfield, L., 326
Rothlin, C. B., 246
Rothlin, M. E., 246
Rothman, S., 332
Rothstein, A., 554
Rothstein, M., 366, 518
Rotman, B., 116
Rott, R., 137, 139
Rottenberg, M., 641, 648
Rouser, G., 516
Roussos, G. G., 112
Roux, L., 775
Rowland, F. S., 718
Rowland, L. P., 368
Rowley, P. T., 649
Rownd, R., 47, 49, 52, 54, 55, 56
Rowson, K. E. K., 131
Roy, A. B., 399, 687
Roy, J. K., 464, 468, 469, 472, 473, 475
Roy, S. C., 358
Roy, W. J., Jr., 291
Rozengart, E. V., 656
Rozynkowa, D., 248
Rubenstein, I., 45, 46, 98
Rubenstein, T., 98
Rubin, H., 130
Rubin, R. J., 481, 482
Rubinstein, D., 251
Rücker, B., 210
Ruckert, H., 160
Rucknagel, D. L., 316
Rudenberg, F. H., 122
Rudloff, V., 306, 307
Rudman, D., 248
Rudner, R., 53, 67, 490, 491
Rudney, H., 628
Rudy, H., 168
Rueckert, R. R., 17, 113, 114, 500
Ruhlmann, K., 729
Rummel, W., 389
Runeberg, J., 738
Runquist, O., 169
Ruoff, P. M., 174
Rupert, C. S., 72, 73, 91
Rusconi, A., 452
Rushizky, G. W., 29, 33, 34, 36, 37, 119
Russell, D. H., 657
Russell, J. W., 287
Russell, W. C., 127, 493
Rutter, W. J., 341, 342, 646
Ryan, A., 24, 118
Ryan, E. M., 659
Ryan, F. J., 19
Rychlik, I., 482
Rydon, H. N., 377, 647
Ryhage, R., 725, 759, 761, 762, 763, 764, 765, 767, 768, 769, 773, 776, 777

S

Sable, H. Z., 111
Sacktor, B., 590, 591
Sadler, P. W., 124
Sadron, C. L., 54
Sagik, B. P., 50, 124
Sagisaka, S., 365
St. Lawrence, P., 24
Saito, K., 258
Saito, N., 338
Saito, T., 334
Saito, Y., 698
Sajter, V., 518
Sakagami, T., 216
Sakai, H., 374, 414
Sakami, W., 355-98; 198, 207, 210, 211
Sakamoto, Y., 449, 450, 494, 495, 496
Salaman, M. H., 131
Salem, L., 537
Salganicof, L., 517, 522
Salim, N., 159, 172
Sallach, H. J., 361, 628
Salomon, L. L., 568
Salser, J. S., 469, 471
Salton, M. R. J., 157
Salumaa, T., 734
Salvador, R. A., 520, 521
Salzman, N. P., 124, 134, 135, 486, 487
Samarina, O. P., 31
Samejima, H., 365
Samuels, A. J., 295, 659, 660
Samuelsson, B., 776
Samval, B. D., 628
Sanadi, D. R., 399, 400, 415, 589, 607, 608
Sand, D. M., 644, 716
Sander, C., 57, 61
Sanders, E., 555
Sanders, F. K., 132
Sanderson, A. R., 325
Sandman, R. P., 388, 389
Sands, R. H., 585, 586, 604, 605, 607
Sanghvi, A. T., 734
Sano, K., 515
San Pietro, A., 618, 627
Santomassino, K. A., 416
Sanwal, B. D., 357, 358
Sarda, L., 242
Sarel-Imber, M., 174
Sargent, J. R., 616
Sarkar, N. K., 46, 57, 61, 62, 579, 580, 596
Sarlos, I. J., 734
Sarma, D. S. R., 447
Sarma, P. S., 443, 447
Saroff, H. A., 718, 728
Sartorelli, A. C., 471, 472, 473, 474, 480, 492
Sasagawa, M., 592
Sasaki, S., 369
Saslaw, L. D., 157
Sastry, L. V. S., 387
Sastry, P. S., 581
Satake, K., 172
Sato, G. H., 103
Sato, H., 46
Sato, K., 377
Sato, R., 409, 592, 594, 739
Sato, T., 169, 336
Sato, Y., 734
Sato-Asano, K., 34
Satoh, K., 336
Satyanarayana, T., 368
Sauerbier, W., 73, 113, 492
Saukkonen, J. J., 326
Saunders, P., 366
Saunier, M. R., 155
Savage, G. M., 494
Savage, N., 608
Savary, B., 242
Savereide, T. J., 643
Saville, N. M., 172
Sawada, S., 599
Sawai, T., 333
Sawyer, W. H., 545
Saxe, M., 656
Sayre, F. W., 365
Saz, H. J., 721
Scarano, E., 688
Scardi, V., 443, 688
Scatchard, G., 282
Schabel, F. M., Jr., 467, 470, 475, 497
Schachman, H. K., 66, 89, 292
Schachter, E., 45, 113
Schachtschabel, D., 35
Schade, A. L., 696
Schaechter, M., 122, 416, 466, 493
Schaeffer, P., 116

Schafer, W., 122, 137, 138, 139
Schaffer, F., 131, 132, 133, 134
Schaffner, C. P., 171
Schalten, P. C., 293
Schanker, L. S., 554
Schapira, F., 342
Scharff, M. D., 135
Schätzle, E., 641
Schatzmann, H. J., 559
Schaub, R. E., 166
Schechter, A. N., 500
Scheer, B. T., 330
Scheier, G. E., 256
Schellenberg, K. A., 626
Schellman, J. A., 284, 294, 659
Scheraga, H. A., 57, 277, 282, 283, 284, 286, 287, 534, 535, 658, 661
Scheuer, P. J., 730
Scheuerbrandt, G., 255, 258, 259, 260, 261, 722
Schick, A. F., 290
Schiessler, R. W., 287
Schildkraut, C. L., 22, 31, 47, 48, 49, 52, 53, 54, 56, 62, 100
Schimke, R. T., 371, 373
Schindler, O., 157
Schirch, L., 189, 190, 197, 363
Schlamowitz, M., 35
Schlein, A., 477, 493
Schlenk, F., 399
Schlenk, H., 644, 716
Schlenk, W., 287
Schlesniger, M. J., 628
Schliep, H. J., 435, 436, 437
Schluederberg, A. E., 137
Schmadel, H., 175
Schmaler, M., 380
Schmandke, H., 174
Schmidt, G., 230
Schmidt, O. T., 175
Schmidt, W. R., 288, 290
Schmidt-Nielsen, K., 554, 559, 561, 564, 571
Schmiechem, R., 173
Schmier, I. , 293
Schmir, G. L., 290, 664, 665
Schmitt, E. E., 294
Schmitt, F. O., 538, 539
Schneider, F., 174
Schneider, H., 230
Schneider, R. G., 311
Schneider, S., 342, 450
Schneider, W. G., 155, 156, 157
Schnek, A. G., 302
Schnoes, H., 771
Schoellmann, G., 291
Schoener, B., 541
Schoessler, M. A., 412, 413
Schoffeniels, E., 554, 559
Schofield, K., 159
Schogt, J. C. M., 225, 722, 727
Scholefield, P. G., 528, 570
Scholfield, C. R., 228, 723
Scholl, F., 722
Schollmeyer, P., 589, 592
Scholtissek, C., 139
Schonbaum, E., 248
Schonbaum, G. R., 647, 657
Schonne, E., 136, 137
Schools, P. E., 256
Schou, L., 362
Schramek, S., 138
Schramm, G., 120, 155
Schramm, H. J., 291
Schrecker, A. W., 206, 429, 480
Schriba, P., 342
Schroeder, H., 168
Schroeder, W. A., 301-20; 302, 303, 304, 305, 306, 307, 312, 315, 316
Schubert, W. J., 738
Schulman, H. M., 50
Schultz, J., 290
Schultz, W., 168
Schulz, A. R., 660
Schulz, D. W., 520, 521, 532
Schulze, C., 392
Schumaker, V. N., 99, 293
Schuster, H., 67, 68, 94, 119
Schwartz, D. P., 723
Schwartz, H. C., 303, 311, 313
Schwartz, H. S., 494
Schwartz, I. L., 412, 413, 557
Schwartz, J. H., 115, 648
Schwartz, S., 452
Schwarz, A., 529
Schwarz, H. P., 723
Schwarz, R. S., 469, 472
Schwarz, V., 336
Schwecke, W. M., 726
Schweet, R., 500
Schweiger, A., 383
Schweiger, M., 29
Schweigert, B. S., 443
Schwelte, H. R., 444
Schwerdt, C. E., 133
Schwert, G. W., 342, 620, 621, 627
Scioscia-Santoro, A., 410
Scott, E. M., 610
Scott, H. M., 336
Scott, J. L., 471
Scott, L. V., 127
Scott, R. P. W., 711
Scott, S. J., 728
Scott, T. W., 251
Scott, W. E., 737
Scouloudi, H., 278
Scow, R. O., 692
Scrimgeour, K. G., 197, 209, 210
Scrubis, B., 731
Sealkins, A., 247
Searls, R. L., 399, 607, 608
Sears, M. L., 493
Sebens, T., 302
Sebring, E. D., 124, 134, 486, 487
Sechaud, J., 119
Seeds, W. E., 54, 55
Seegmiller, J. E., 374, 381
Seeliger, A., 160
Segal, H. L., 250, 385, 386, 646, 690, 702
Segal, L., 155
Segal, S., 336, 570, 692
Sehgal, S. N., 216, 224, 225
Seibl, J., 765, 767, 770, 771
Seidenberg, M., 381
Seitz, J. F., 340
Sekeris, C. E., 383
Sekeris, K. E., 383
Sekezu, I., 400
Seki, I., 738
Sekiguchi, M., 19, 43, 73, 105, 107, 108, 114, 494, 495, 496, 499
Sekiya, Y., 724
Sekuzu, I., 582, 584, 585, 587, 605, 629
Sela, M., 286, 289, 405
Selleby, L., 159
Sellers, E. A., 248
Sellinger, O. Z., 359
Semenza, G., 51
Sen, A. K., 567
Sen, N. P., 374
Senior, J. R., 243, 264
Sentheshanmuganathan, S., 327, 391
Sereni, F., 386, 700
Sergiescu, D., 133
Serras, L., 168
Seshadri, Sastry, P., 243
Setlow, J. K., 71, 91, 104, 492
Setlow, R., 71, 91, 104, 114, 492
Seto, J. T., 138
Seto, Y., 134
Severin, E. S., 388
Seward, W. D., 558
Shafia, F., 115
Shafrir, E., 246
Shah, P. C., 607
Shaltiel, S., 290
Shamgar, A. H., 161, 174
Shanes, A. M., 557
Shannon, A., 250
Shaper, J. H., 335
Shapiro, B., 246, 247
Shapiro, D., 227
Shapiro, H. S., 47, 48, 52,

53, 491
Shapiro, R., 159
Shapiro, S. K., 399
Sharefkin, J. G., 663
Sharma, C., 341
Sharman, I. M., 263
Sharon, N., 122, 659, 662
Sharp, C. W., 56
Sharp, D. G., 122
Shatkin, A. J., 19, 21, 51, 73, 124, 132, 135, 327, 494, 495, 496, 497, 498, 499, 696
Shaw, D. R. D., 322
Shaw, E., 291, 435
Shaw, G., 166
Shaw, M., 696
Shaw, N., 454
Shaw, T. I., 539, 540, 556, 557, 558
Shay, A. J., 477
Shcherbakova, L. I., 469
Sheba, C., 343
Sheehan, J. C., 290, 641
Sheehe, P. R., 481
Sheek, M. R., 122, 124
Sheffield, F. W., 124
Shein, H. M., 129
Shelton, B., 171
Shelton, J. B., 303, 305, 306, 307, 315
Shelton, J. R., 303, 305, 306, 307, 315
Shemin, D., 363, 368, 452, 640
Shen Han, T. M., 163, 174
Shepherd, D. M., 389
Shepley, K., 612
Sheppard, D. E., 116
Sheppard, N., 723, 740
Shereshevskaya, T. M., 48
Sherman, H., 469
Sherman, J. H., 478
Shetlar, M. R., 337
Shibaev, V. N., 324
Shigeura, H. T., 494
Shimamura, M., 540
Shimanouchi, T., 61
Shimazono, N., 344, 345, 346, 441
Shimizu, S., 726
Shimizu, T., 245
Shimojo, T., 216
Shimura, K., 365
Shiner, V. J., Jr., 619, 620, 624, 657
Shiota, T., 172, 337, 432
Shiraishi, J., 599
Shive, W., 360, 420
Shoemake, G. R., 713
Shoolery, J. N., 156, 158
Shooter, C. V., 304
Shooter, E. M., 56, 64, 304, 311, 312
Shope, R. E., 128, 129
Shore, B., 244
Shore, V., 244, 269, 307, 308, 310, 314
Shortland, F. E., 734
Shotlander, V. L., 216
Shreve, J. P., 316
Shuey, E. W., 322, 326
Shug, A., 106
Shugar, D., 70, 91, 488
Shukla, P. D., 277, 284
Shull, K., 699
Shunk, C. H., 140, 172
Shuster, C. W., 661
Shuster, L., 478
Shyluk, J. P., 741
Sibatani, A., 31, 32, 50
Sidbury, J. B., Jr., 648
Siddiqui, I. R., 175
Siddiqi, O., 24
Sidhu, G. S., 570
Sie, H. -G., 172
Siebert, G., 65, 66
Siegel, B. V., 124
Siegel, L., 597
Sieker, L. C., 276, 281
Siekevitz, P., 555
Sigorth, K., 522
Sigsby, J. E., 737
Silber, R., 188
Silberman, H. R., 468
Silva, O. L., 374
Silver, L., 347, 412, 413
Silverman, M., 185, 195, 210
Simandl, J., 407
Simha, R., 53
Siminoff, P., 140, 477, 493
Simmel, E. B., 485
Simmonds, P. G., 713
Simmons, B., 193
Simmons, N. S., 54, 293
Simon, E., 90
Simon, E. H., 64, 103, 104, 134, 487
Simon, E. J., 640
Simon, E. R., 685
Simon, E. W., 390
Simon, G. R., 358
Simon, H., 167, 435, 436, 437
Simon, K. A., 560
Simon, M., 48, 57, 126
Simon, S. E., 554
Simonovitch, L., 122, 123, 124
Simonsen, D. G., 515
Simpson, L., 469
Simpson, M. S., 465, 466
Simpson, M. V., 15, 16, 24, 27, 28, 30, 31, 464, 482, 486, 499
Sinclair, R., 359
Singer, B., 37, 120
Singer, M. F., 35
Singer, S. J., 290, 304, 311
Singer, T. P., 579, 580, 583, 596, 597, 600, 606, 607, 612, 613, 614
Singh, A., 292
Sinsheimer, R. L., 43, 44, 55, 65, 70, 90, 97, 113, 114, 119, 490, 491
Sirotnak, F. M., 467
Sison, Y., 327
Sissakyan, N. M., 340
Sistrom, W. R., 554, 571
Sivak, A., 346, 380
Sizer, I. W., 611, 661
Sjöstrand, J., 522
Sjövall, J., 719, 734, 776
Skaar, P. D., 118
Skell, P. S., 158
Skipper, H. E., 464, 465, 466, 467, 468, 469, 470, 471, 474, 475, 476, 477, 479, 497
Skipski, V. P., 728
Skoda, J., 464, 468, 476, 481, 484
Sköld, O., 481, 483, 485, 486, 489
Skou, J. C., 528, 531, 559, 560, 561
Skraly, R., 248
Skrebitsky, V. G., 518, 524
Skuratovskaia, I. N., 128
Slade, P., 641
Slater, E. C., 584, 588, 589, 590, 591
Slaughter, C., 657
Slavík, K., 480
Slavíková, V., 480
Slechta, L., 473
Sloane-Stanley, G. H., 525
Slodki, M. E., 328
Slomp, G., 156, 171
Slonimski, P. P., 613
Slotnick, I. J., 19
Slotz, E., 683
Small, T., 62
Smejkal, F., 140, 484
Smellie, R. M. S., 65, 66, 487
Smets, G., 641
Smillie, R. M., 346
Smith, A. E., 287
Smith, A. L., 583
Smith, C., 121, 127
Smith, C. A., 316
Smith, C. G., 339
Smith, C. R., 722, 723
Smith, D. B., 224, 305
Smith, D. E., 520, 521, 568, 681
Smith, D. M., 738
Smith, E. E., 721
Smith, E. E. B., 322, 326, 327, 334
Smith, E. L., 208, 209, 288, 450, 584, 648, 657
Smith, F., 155, 158, 164
Smith, G. M., 315
Smith, H., 338
Smith, H. A., 668
Smith, H. L., 692

Smith, J. B., 158
Smith, J. D., 33, 95, 135, 487
Smith, J. E., 47, 48, 122, 390, 739
Smith, J. L., 382
Smith, K. C., 70, 71, 492
Smith, K. M., 119, 128
Smith, K. O., 88, 122, 127
Smith, L., 587, 592
Smith, L. F., 290
Smith, L. H., Jr., 481
Smith, M., 173
Smith, M. G., 337, 629
Smith, M. S., 110, 474
Smith, P. K., 474
Smith, R. A., 335, 663
Smith, R. L., 248
Smith, S., 499, 655
Smith, S. W., 563
Smith, T., 363
Smith, T. A., 390
Smith, T. E., 376, 618
Smith, V. N., 713
Smith, W. J., 384
Smith, W. R., 739
Smithers, D., 473, 474
Smithies, O., 302
Smyth, D. G., 289
Smyth, D. H., 570
Smyth, R. D., 208, 453
Snedden, W., 771
Snell, E. E., 191, 364, 377, 388, 422, 424, 448, 449, 450, 616, 650
Snoke, J. E., 391
Snoswell, A. M., 588, 589, 611
Snow, N. S., 315, 316
Snyder, E. R., 649
Snyder, S. H., 374
Snyderman, S. E., 369
Sober, H. A., 33, 34, 37, 119
Soda, K., 387
Sodikoff, C. H., 373
Soffer, R. L., 337
Sohier, R., 127
Sokol, F., 138, 140
Sokoloff, B., 493, 494, 497
Sokoloff, L., 513
Solbakken, A., 659
Soller, A., 95
Solomon, A., 554, 556, 561
Soloway, S. B., 739
Sols, A., 335, 569
Solt, M. L., 444
Someroski, J. F., 444
Somers, C. E., 67, 70, 493
Somerville, R., 109, 110, 191, 202
Søndergaard, E., 262
Sonneborn, T. M., 122
Sonneveld, W., 722
Soodak, M., 411
Sophianopoulos, A. J., 276, 598
Sorbo, B., 251, 407, 408, 409, 410, 411
Sorm, F., 52, 140, 473, 481, 482, 484
Šormová, Z., 464
Sorto, T., 725
Sowden, J. C., 160, 169, 172, 173, 174
Soyama, T., 599, 625
Spackman, D. H., 289, 290
Spadoni, M. A., 486
Spaet, T. H., 313
Spahr, P. F., 21, 22, 32, 486
Spalla, C., 452, 453
Spanner, S., 221, 224, 225, 228, 363
Sparagana, M., 734
Sparks, S. J., 499
Spearing, C. W., 138
Speck, J. C., Jr., 649
Spector, L., 411
Spedding, H., 155
Speir, R. W., 132
Spencer, C. C., 158
Spencer, E. Y., 653
Spencer, J. F. T., 164, 216, 736
Spencer, J. H., 52
Spencer, J. M., 626
Spencer, M., 26, 54, 55
Spencer, R. R., 171
Spenser, I. D., 444
Sperry, R. W., 518
Sperti, S., 338
Speyer, J. F., 24, 499, 501, 649
Spiegel, M. J., 614
Spiegelman, S., 22, 25, 31, 32, 50, 104, 114, 115, 500, 695
Spirin, A. S., 47, 48, 119
Spitler, E. M., 731
Spitzer, J. J., 246, 248
Spivak, C. T., 169
Spivey, E., 655
Spizizen, J., 109, 111
Spoors, J. W., 155, 174
Sporek, K. F., 738
Spotts, C. R., 501
Sprague, C. C., 469
Sprinson, D. B., 199, 453
Spyropoulos, C. S., 540, 541
Squires, C., 259
Srere, P. A., 253, 657
Srinivasan, P. R., 359, 476
Stacey, K. A., 290
Stacey, M., 155, 158, 159, 163, 168, 169, 171, 172
Stacey, V. A., 54
Stachiewicz, E., 613
Stack, E., 731, 734
Stadtman, E. R., 367, 421, 548
Stadtman, T., 362, 367
Staehelin, M., 33, 37
Stahl, F., 46, 60, 64, 67, 70, 72, 73, 90, 91, 292, 491, 492
Stakheeva-Kaverzneon, E. D., 168
Stallberg-Stenhagen, S., 725, 759, 761, 762, 765, 768, 773
Stanacev, N. Z., 235, 728
Stancer, H. C., 530, 566
Standinger, H. J., 581
Stanford, R. H., 276
Stanier, R. Y., 501
Stanley, W. L, 726, 731
Stanley, W. M., 87, 89, 120, 128
Stapley, E. O., 494
Stark, W., 726
Starman, B., 65, 114
Staub, A. M., 116
Stearns, D. K., 171
Steele, J. A., 734
Steele, R., 247
Steere, R. L., 87, 119
Steim, J. M., 137
Stein, A. M., 681, 6[illegible]
Stein, O., 245, 263
Stein, R. A., 722, 727
Stein, W. D., 568
Stein, W. H., 289, 290
Stein, Y., 245, 263
Steinbach, H. B., 556
Steinberg, D., 247, 263
Steinberg, I. Z., 57, 286, 287, 661
Steiner, D. F., 330
Steiner, M., 390
Steiner, R. F., 294
Steinhardt, C., 389
Steinrauf, L. K., 276
Stekol, J. A., 73
Stella, E. J., 378, 386, 699, 701
Stelos, P., 416
Stenĕk, J., 160
Stenhagen, E., 725, 759, 761, 762, 763, 764, 765, 767, 768, 769, 770, 773
Stent, G. S., 24, 51, 64, 90, 95, 103
Stephens, E. R., 737
Stephens, J. D., 485
Stephens, M. L., 683
Stephenson, M. L., 29, 30
Sterling, K., 314
Stern, C. A., 245
Stern, J. R., 251
Šterzl, J., 472
Stetten, D., Jr., 404, 405, 406
Stetten, M. R., 194
Stevens, A., 15-42; 17, 50, 104, 464, 487
Stevens, J. D., 156, 157
Stevens, M., 499
Stevens, R., 724
Stevenson, G. W., 729

Stevenson, I. H., 345
Stevenson, R., 732
Steward, F. C., 768
Stewart, D. L., 136
Stewart, S. E., 43, 44, 129
Stiehler, R. D., 558
Still, J. L., 723
Stirpe, F., 216, 218
Stjernholm, R. L., 336
Stock, C. C., 479
Stöck, J., 729
Stock, J. C., 93
Stocker, B. A. D., 116
Stockx, J., 35
Stodola, F. H., 228
Stoeckenius, W., 54, 536
Stoffel, W., 262, 722
Stoffyn, P. J., 175
Stoker, M. G. P., 127, 129
Stokes, A. R., 43, 54, 55
Stokstad, E. L. R., 206, 419, 430
Stolberg, M. A., 656
Stollar, D., 57, 61, 63, 91, 100
Stolzenbach, F. E., 618
Stone, B., 691
Stone, N., 375
Stone, R. S., 129
Stoodley, R. J., 159
Stoppani, A. O. M., 678
Storck, R., 50, 104
Storey, J. D., 158
Störiko, K., 428
Stotz, E., 216, 217, 218, 230
Strack, H. B., 68
Strain, J. J., 129
Strandberg, B. E., 269, 307, 308, 310, 314
Straub, F. B., 342, 579
Straub, J. P., 583
Straus, S., 756
Strauss, J. H., Jr., 114
Strecker, H. J., 374, 375, 591, 610, 628, 683
Strehler, B. L., 759
Streisinger, G., 67, 72, 73, 95, 97, 101, 102, 111, 491
Strelzoff, E., 19, 67, 491
Stretton, A. O. W., 312
Strickland, K. P., 220, 221, 263
Strittmatter, C. F., 678
Strittmatter, P., 614
Strobach, D. R., 160, 172, 173
Strominger, J. L., 321, 323, 325, 520
Strong, F. M., 739
Strong, N. A., 158
Strumeyer, D. H., 291
Stryer, L., 660
Stryker, V. H., 275, 287
Stuart, A., 436
Stubblefield, E., 500
Stueben, K. C., 294
Stuerle, H., 290
Stumpf, P. K., 222, 241, 252, 253, 259, 261, 264, 400
Sturgeon, P., 312
Sturtevant, J. M., 602, 604, 660, 664, 665
Stutts, P., 466, 467, 468, 470, 471, 472, 473, 474, 475, 489
Stuy, J. H., 68
Su, J.-C., 322, 327
Sudduth, H. C., 263
Sueoka, N., 30, 47, 48, 51, 56, 64, 382
Sugihara, J. M., 159
Sugii, M., 368
Sugisawa, H., 721
Sugiura, K., 19, 494
Sugiyama, T., 37
Sullivan, J., 659
Sullivan, M. F., 243
Sulser, D. F., 545
Sumizu, K., 334
Sund, H., 356
Sundaram, T. K., 447
Sundaresan, P. R., 328
Sung, S., 35
Sunwal, B. D., 369
Suomi, W., 230
Supina, W. R., 736
Suranyi, E. M., 591
Suskind, S. R., 108, 377
Sussman, A. S., 382
Sutcliffe, E. Y., 474
Sutcliffe, J. F., 554
Sutherland, E. W., 331
Sutherland, I., 450
Sutherland, M. D., 727, 732
Sutton, C. R., 390
Sutton, D. D., 335
Suzue, T., 429
Suzuki, F., 22
Suzuki, I., 344
Suzuki, J., 650
Suzuki, K., 343
Suzuki, S., 322, 323, 328
Suzuki, T., 368
Suzuki, Y., 426, 427, 428
Sved, S., 132
Svendson, A. B., 728, 738, 739
Svennerholm, L., 224
Svensson, H., 87, 295
Sverak, L., 131
Svoboda, G. H., 502
Swain, C. G., 642, 654, 655, 657, 658
Swan, B., 158
Swartz, D. J., 737
Swartz, M. N., 53, 65, 66, 67, 114, 490, 491
Sweeley, C. C., 171, 709, 711, 714, 716, 717, 722, 724, 727, 728, 733
Swell, L., 256
Swenson, C. A., 288
Swenson, R. T., 303, 311, 313
Swift, L. J., 725
Sych, G., 174
Sydenstricker, V. P., 311
Sydow, E. v., 759
Sykes, J., 22, 493
Sykes, P. J., 722
Sykes, R. L., 290
Symonds, N., 103
Szabó, L., 173
Szabó, P., 173
Szabolcsi, G., 660
Szczepkowski, T. W., 410
Szent-Györgyi, A., 1-14; 533, 538, 545
Szentirmai, A., 362, 365, 370
Szer, W., 488
Szilard, L., 73
Szmuszkovicz, J., 775
Szwarc, M., 644
Szybalska, E., 466, 467, 468, 470
Szybalski, W., 56, 64, 67, 70, 113, 466, 467, 468, 470, 490, 492, 493
Szymona, M., 336
Szymona, O., 336
Szynkiewicz, Z. M., 111

T

Tabachnick, J., 28
Tabor, C. W., 97
Tabor, H., 56, 57, 97, 195, 196, 197
Taborsky, G., 532
Tada, H., 652
Tada, M(ariko), 29, 35
Tada, M(itsuhiko), 29, 35
Tadenuma, M., 724
Tagawa, K., 618
Tager, J. M., 588, 589
Taggart, V. C., 294
Taira, T., 724
Tait, G. H., 363, 365, 367
Takada, I., 426
Takagaki, G., 359
Takagi, J., 44, 115
Takagi, Y., 43, 51, 107, 114, 494, 495, 496
Takahashi, H., 17, 594
Takahashi, K., 34
Takahashi, M., 122
Takahashi, T., 130, 345
Takai, M., 31, 500
Takamiya, A., 618
Takebe, H., 116
Takeda, I., 425, 426
Takeda, Y., 22
Takehara, M., 136
Takehashi, W. N., 121
Takemori, S., 582, 584, 585, 587
Takemoto, K. K., 131

Takenaka, Y., 342, 627
Takeshita, M., 421
Takesue, Y., 611
Taketo, A., 43, 114
Takeuchi, L., 333
Takeyama, S., 207, 208
Takiguchi, H., 344, 346
Takita, H., 494
Talalay, P., 626, 680, 681, 683
Talbert, P. T., 189, 197
Tam, S. W., 726
Tamiya, N., 375
Tamm, I., 134, 136, 139, 140
Tanaka, M., 391
Tanaka, R., 441, 692
Tanaka, S., 334, 358, 611, 734
Tanaka, T., 443, 699
Tanaka, Y., 174
Tanami, Y., 490
Tanenbaum, S. W., 63
Tanford, C., 57, 285, 287, 294, 689
Tang, Y., 718
Taniguchi, S., 594
Taniuchi, H., 380
Tannenbaum, M., 336
Tao, M., 43, 44, 113, 147
Tarr, H. L. A., 474
Tasaki, I., 525, 540, 541
Tashiro, M., 380
Tatibana, M., 323, 421, 474, 475
Tatum, E. L., 19, 21, 51, 73, 132, 327, 440, 494, 495, 496, 497, 498, 499, 696
Taube, H., 653
Taylor, B., 558
Taylor, C. B., 559
Taylor, G. A., 629
Taylor, I. M., 557
Taylor, L. J., 642
Taylor, N. F., 175
Taylor, O. C., 737
Taylor, P. J. M., 172
Taylor, P. M., 157
Tchen, T. T., 110, 382, 387, 495
Tchola, O., 649
Teague, C., 473, 474
Teeter, H. M., 722
Telfer, M. A., 695
Teller, M. N., 493
Temperli, A., 581
Temple, S., 683
Templeman, M. B., 158
Tener, G. M., 33, 173
Tentori, L., 409
Teorell, T., 540, 541
Tepley, L. J., 443
Teranishi, R., 716, 730, 738
Terner, C., 557
Terzaghi, B. E., 67, 491
Terzuolo, C. A., 543
Tessman, I., 67, 68, 94
Teung, Y. C., 276
Thain, E. M., 657, 739
Thale, M., 568
Thaller, V., 773
Thannhauser, S. J., 230
Thaysen, J. H., 558, 563
Theander, O., 159, 764
Theobald, R. S., 155, 157, 174
Theorell, H., 619, 620, 621, 622, 623, 624
Theriot, L., 113, 492
Thesing, J., 648
Thesleff, S., 559
Thie, R. S., 477
Thier, S., 692
Thijsse, G. J. E., 721
Thimann, K. V., 466, 732
Thoma, J. A., 563, 659
Thomas, C. A., 45, 46, 58, 59, 61, 98, 99, 100, 108
Thomas, D. R., 473
Thomas, G. H., 734, 745, 748
Thomas, H. J., 464, 468
Thomas, J., 571
Thomas, L. B., 188
Thomas, L. F., 156
Thomas, R., 118
Thomas, R. J., 655
Thomas, R. S., 128
Thomasson, H. J., 241
Thome-Beau, F., 372
Thompson, A., 157, 167, 170
Thompson, C. C., 335
Thompson, G. A., Jr., 215-40; 225
Thompson, J. F., 372, 404
Thompson, M. J., 734
Thompson, R. H., 519
Thompson, R. Q., 424
Thompson, S. A. M., 663
Thompson, T. E., 295, 401, 617
Thompson, T. L., 115
Thompson, W., 237
Thomson, A. D., 120
Thomson, C. G., 526
Thomson, J. F., 657
Thomson, J. R., 465, 466, 470, 475
Thorell, B., 131
Thorén, M. M., 134, 135, 500
Thorin, H., 224
Thorn, M. B., 583
Thornber, J. M., 598
Thorne, C. B., 115, 358
Thorne, K. J. I., 257, 722
Thornton, E. R., 292, 657
Thorsdalen, N., 140
Thürkauf, M., 641
Thurzo, V., 481
Tice, S. V., 408
Tidwell, H. C., 242
Tieckelmann, H., 381
Tietze, F., 404, 405, 406
Tilak, M. A., 728
Tillett, J. G., 651
Timell, T. E., 159, 164
Timmons, R., 119
Tinelli, R., 116
Ting, R. C., 116
Tinoco, I., 56
Tinoco, J., 250
Tin-sen, S., 388
Tipson, R. S., 155, 168
Tisdale, H., 583
Tissières, A., 17
Tissot, R., 544
Titani, K., 584
Titova, G. V., 341
Titus, E., 564, 566
Tjaden, R. J., 247
Tocco, D. J., 554
Tochikura, T., 387
Todd, A., 159, 168, 173, 450, 653
Todd, P. H., 740
Tolbert, N. E., 362, 615
Tomasz, A., 488
Tomida, I., 728
Tomisek, A. J., 477, 479
Tomita, K., 277, 658
Tomizawa, H. H., 404
Tomizawa, S., 470
Tomkins, G. M., 677-708; 356, 357, 625, 626, 678, 680, 681, 684, 685
Tomlin, P., 70, 492
Tomlinson, R. V., 33
Tong, E., 291
Tong, L. K. J., 643
Tono, H., 488, 489
Toohey, J. I., 208
Topper, Y. J., 336, 628, 685, 686
Topping, R. M., 385, 650
Torchinsky, U. M., 399
Torres, H. H., 333
Torriani, A., 34, 327
Tosa, T., 367
Toschi, G., 118
Toseland, P. A., 289
Tosi, L., 593, 612
Tosteson, D. C., 560, 572
Totton, E. L., 337
Tournier, P., 89, 120, 136
Tousimis, A. J., 122
Tove, S. B., 250
Tower, D. B., 290, 543, 544, 545
Townsend, E., 100
Townsend, L. B., 437
Townsley, P. M., 87
Toyoshima, S., 134
Träger, L., 475
Train, K. E., 762
Trams, E. G., 232, 526

Traut, R. R., 329, 330
Trautman, O., 411
Trautman, R., 135
Trautner, T. A., 53, 65, 66, 67, 114, 490, 491
Traynham, J. G., 727, 732
Treadwell, C. R., 256
Treble, D. H., 428
Tribby, I., 122
Trischmann, H., 526
Tritch, H., 289, 718
Trofileeva, R. N., 171
Troll, W., 57
Tromans, W. J., 113
Troshin, A. S., 554
Trotter, I. F., 280, 308
Troy, W., 499
Trucco, R. E., 138
Trudgill, P. W., 362
Trudinger, P. A., 593
Trueblood, K. N., 450
Truscoe, R., 556, 557, 559
Tsao, M. U., 597
Tschampel, D., 526, 527
Ts'o, P. O. P., 57, 61, 697
Tsou, C. L., 579, 597
Tsuboi, M., 61
Tsuda, K., 734, 738
Tsugita, A., 120
Tsuiki, S., 362
Tsuji, M., 389
Tsuji, T., 134
Tsujino, I., 334
Tsumura, N., 336
Tsunoda, A., 140
Tu, A. T., 120
Tubbs, P. K., 599, 611, 614
Tucker, R. G., 113
Tudball, N., 364
Tulinsky, A., 494
Tullen, P., 731
Tulloch, A. P., 164, 723
Tuppy, H., 288, 584
Turano, C., 649
Turba, F., 693
Turner, A. F., 173
Turner, D. A., 717, 734, 741
Turner, J. C., 174
Turner, J. F., 405, 617
Turner, J. M., 449
Tursky, T., 518
Turvey, J. R., 174
Tyrell, D. A. J., 138, 215
Tytell, A. A., 133
Tyufanov, A. V., 130

U

Uchida, H., 65, 103, 116
Uchida, T., 326
Udaka, S., 615, 628
Udenfriend, S., 375, 380, 384, 388, 389, 618
Ueda, K., 438
Ueda, M., 724
Ueda, T., 134
Uemura, T., 370
Uetake, H., 116
Ugoleva, N. A., 48
Uhlig, H., 120
Uhr, J. W., 113
Ukstins, I., 198, 207, 210, 211
Ulbricht, T. L. V., 167
Ullman, H. L., 216
Ullmann, A., 501
Ulmer, D. D., 294, 660
Ulrich, B., 342, 590
Ulwer, D. D., 623
Umbarger, H. E., 361, 368, 370
Umbarger, M. A., 361
Umezawa, S., 164, 171
Underwood, G. E., 140
Ungar-Waron, H., 468, 601
Unterholzner, W. C., 34
Upchurch, H. F., 480
Urata, G., 363
Urbach, G., 768
Urnes, P., 278, 293, 294
Urone, P., 739
Ushida, T., 499
Ussing, H. H., 554, 555, 556
Utiyama, H., 292
Utter, M. F., 341, 470
Utterback, J. G., 683
Uyeo, S., 737
Uziel, M., 291
Uzu, K., 494

V

Vagelos, P. R., 252, 253, 254, 257, 264, 421, 661, 722, 741
Vail, M. H., 466
Valentine, R. C., 88, 132, 618, 652
Vallee, B. L., 294, 385, 623, 624, 660
van Adrichem, M., 647
van Arkel, G. A., 91
Vanbeers, G. J., 722
Van Bieber, M. J., 111
Van Camp, A., 172
van Deenen, L. L. M., 216, 217, 218, 219
Vandenbelt, J. M., 203
van den Bergh, S. G., 590
Vandendriessche, L., 35
Vandenheuvel, F. A., 536, 537, 722
VandenHeuvel, W. J. A., 709-54; 709, 711, 713, 714, 715, 716, 717, 718, 719, 720, 721, 726, 728, 729, 733, 734, 735, 737, 739, 740, 741, 743, 745, 746
van de Pol, J. H., 44, 91, 96, 102
Vanderheiden, B. S., 341, 342
van der Linden, A. C., 721
Van Der Schoot, J. B., 384
van der Sluys, I., 88
Van Duyne, C. M., 245, 264
Van Eys, J., 625, 627
van Gelder, B. F., 584
van Gent, C. M., 216, 744
Van Harreveld, A., 539
van Heyningen, W. E., 527
Van Holde, K. E., 276, 292, 294
van Houten, W. H., 523, 525
Van Kammen, A., 121
Van Leeuwen, G., 328
Vannier, S. H., 726
Van Pilsum, J. F., 373
Van Regenmortel, M. H. V., 87
Vansanten, G., 119
Van Senden, K. G., 643
van Tamelen, E. E., 171
van Thoai, N., 372
Van Vunakis, H., 57, 63, 97, 100, 108
Van Wijhe, M., 342
Vanyushin, B. F., 48
Varadarajan, S., 111
Varandani, P. T., 328
Varma, S., 651
Varnier, S. H., 731
Vasquez, C., 136
Vatter, A. E., 127
Vaughan, M., 241, 244, 245, 263
Vavra, J., 385
Vecchini, P., 649
Veeger, C., 579-638; 399, 580, 596, 599, 608, 609, 615
Veen, M. J., 702
Veerkamp, J. H., 218
Veiga, L. A., 337, 629
Veldhuisen, G., 44
Velick, S. F., 385
Vella, F., 312
Venditti, J. M., 206, 470
Venkataraman, R., 344
Venner, H., 157, 160
Vennesland, B., 615, 628
Venson, A. A., 156
Veprintsev, B. N., 540
Verbeke, R., 258, 260, 264
Vercamer, E. N., 189
Verheijden, J. P., 162, 175
Vernon, C. A., 161, 385, 650, 651, 657
Vernon, L. P., 579, 580, 596
Verster, F., 359
Vertrees, K. M., 314
Verwoerd, D. W., 34
Vescia, A., 380, 443
Vestling, C. S., 598

Vetter, W., 729, 767, 771, 775
Victor, M., 532
Vidal, S., 569
Vieira, E., 435
Vielmetter, W., 67, 94, 442
Vignais, P. M., 589
Vignais, P. V., 589
Vilcek, J., 140
Villar-Palasi, C., 330
Villa-Trevino, S., 699
Villee, C. A., 626, 680, 681, 682, 693
Vincent, W. S., 21, 50
Vining, L. C., 19
Vinograd, J., 292, 293, 303, 304
Vioque, E., 723
Virtanen, A. I., 420
Viscontini, M., 166
Vitas, K. I., 128
Vitelli-Flores, J., 136
Vithayathil, P. J., 286
Vizsolyi, J. P., 173
Vladimirova, A. D., 340
Voet, D., 293
Vogel, H., 365, 366, 371, 420, 569
Vogel, J., 441
Vogt, M., 130, 487
Vogt, P. K., 130
Vogt, W., 561
Vohnout, S., 248
Volcani, B. E., 208
Volfin, P., 347
Volk, W. A., 339, 346
Volkin, E., 19, 25, 33, 50, 104, 105, 106
Volpenhein, R. A., 242
von Bebenburg, W., 174
von Ehrenstein, G., 24, 500, 501
Von Essen, C. F., 492
von Hippel, P., 59
von Phillipsborn, W., 156
von Rudloff, E., 725, 738, 741
von Saltza, M. H., 169
von Tavel, P., 87
von Zahn-Ullmann, S., 139
Voss, J., 140

W

Wachsman, J. T., 466
Wachter, R. F., 136
Wacker, A., 70, 71, 91, 435, 475, 492
Wacker, H., 435, 436, 437
Wada, H., 388, 449, 450, 616
Wada, K., 587
Wade, R., 677, 679
Wadkins, C. L., 579
Wadzinski, I. M., 380
Waelsch, H., 359, 544
Wagner, A., 164
Wagner, A. F., 494
Wagner, H., 236, 259
Wagner, J., 728
Wagner, M., 249, 256
Wagner, N. J., 489
Wagner, R. P., 368, 421
Wagner-Jauregg, T., 656
Wahba, A. J., 189, 201, 202, 204, 205, 206
Wahl, R., 43, 96, 97, 113, 114
Wain, M. E., 171
Wainfan, E., 26
Wainio, W. W., 583
Waisman, H. A., 380
Waite, M., 253
Wakaki, G. B., 494
Wake, R. G., 56, 66
Wakil, S. J., 241, 252, 253, 254, 255, 261, 262, 399
Wakim, K. G., 385
Waksman, S. A., 19
Waldschmidt, M., 411, 435, 436, 437
Walerych, W., 452
Waley, S. G., 402, 639
Walker, D. L., 122
Walker, G. C., 592, 595
Walker, H. G., 735
Walker, J., 441
Walker, J. B., 372, 373
Walker, L. M., 690
Walker, M., 372
Walker, P. G., 157, 171
Wall, R. A., 157
Wall, R. E., 658
Wallen, L. L., 723
Wallenius, G., 302, 312
Waller, G. R., 444
Wallis, C., 133
Walsh, J. T., 741
Walther, B., 739
Walton, D. J., 171
Walton, E., 172
Wang, C. H., 343, 344, 732
Wang, D. H., 330
Wang, S. Y., 71
Wang, T. P., 445
Wang, T. Y., 579, 597
Wang, Y. L., 579, 597
Waravdeker, V. S., 157
Ward, G. B., 422
Ward, J. M., 407
Ward, K., Jr., 161
Ward, P. F. V., 723, 740
Ward, W. H., 290
Ware, J. R., 519
Warner, R. C., 50
Warren, F. L., 572
Warren, L., 138, 322, 337
Wartofsky, L., 402, 617
Washko, M. E., 690
Watanabe, I., 50, 61, 91, 105, 126, 136, 138
Watanabe, M., 737
Watanabe, T., 171, 172
Watanabe, Y., 382
Watari, H., 580, 596, 599, 625
Waters, J. A., 734
Waterson, A. P., 137
Watkins, M. L., 245
Watkins, W. M., 335
Waton, N. G., 389
Watson, C. J., 452
Watson, D., 657
Watson, H. C., 269, 271, 307, 308, 310, 314
Watson, J. D., 21, 22, 32, 43, 48, 50, 54, 63, 67, 486
Watson, M., 51
Watts, J. O., 739
Watts, R., 216, 217, 219, 225, 226
Watts-Tobin, R. J., 69, 92
Wawszkiewicz, E. J., 172
Way, J. L., 464, 468, 472, 473, 474, 485
Waygood, E. R., 360, 390
Waymouth, C., 359
Weaver, N., 723
Webb, E. C., 665, 687
Webb, J. P. W., 258
Webb, J. S., 494, 497
Webb, R. P., 653
Webber, J. M., 159, 171, 172
Weber, E., 120
Weber, F. N., 89, 292
Weber, G., 502
Weber, M. M., 609, 702
Webster, G., 464
Wecker, E., 136, 137
Weenen, J. H. M., 627
Weenink, R. O., 732
Wegerle, D., 290
Weibel, J., 136
Weidel, W., 101, 102
Weidmann, H., 159, 163, 171
Weigel, H., 158, 159, 334
Weigle, J., 64, 90, 117
Weil, A., 721
Weil, J. H., 30
Weil, R., 43, 44, 129
Weill, J. D., 50
Weil-Malherbe, H., 441
Wein, J., 628
Weinblum, D., 71, 492
Weinhouse, S., 341, 502
Weinshelbaum, E. Z., 693
Weinstein, I., 245, 500
Weinstein, W., 534
Weintraub, R. L., 407
Weisblum, B., 24, 36
Weisman, H. A., 699
Weisman, R. A., 432, 433
Weiss, B., 359, 476
Weiss, H. S., 263
Weiss, M. J., 166
Weiss, S. B., 16, 17, 20, 25, 50, 51, 104, 242,

487, 563, 696
Weiss, U., 444
Weissbach, A., 119, 495, 496
Weissbach, H., 208, 380, 388, 389, 453, 454, 618, 686, 738
Weissbluth, M., 545
Weissman, G., 690
Weitkamp, H., 441
Welch, A. D., 185, 190, 464, 468, 474, 476, 481, 482, 483, 485, 486, 490, 492, 493, 501
Welcher, A. D., 663
Weliky, N., 303, 314
Welkie, G. W., 120
Wellner, D., 600, 601
Wells, M., 315, 316
Wells, W. W., 717, 733
Welsh, R. S., 46
Wempen, I., 165, 167
Wen, W.-Y., 282, 534
Wendt, V. E., 246
Wenke, H., 247
Wenner, C. E., 340
Werkheiser, W. C., 188, 189, 480
Werko, L., 251
West, C. A., 171
West, G. B., 389
Westall, R. G., 745
Westaway, E. G., 367
Westhead, E. W., Jr., 640
Westheimer, F. H., 292, 649, 656, 657, 658
Westley, J., 409, 411, 651
Westphal, O., 160
Weurman, C., 726
Weygand, F., 167, 435, 436, 437, 728, 729
Whaley, H. A., 171
Wharton, D. C., 584, 585, 586
Wharton, D. R. A., 741
Wharton, M. L., 741
Wheeldon, L. W., 216, 220
Wheeler, G. P., 19, 470, 497, 498, 501, 502
Wheeler, K. P., 559
Wheelock, E. F., 500
Whelan, W. J., 155, 157
Wheland, G. W., 644
Wherrett, J. R., 234, 290, 526
Whiffen, D. H., 155
Whistler, R. L., 155, 159, 174, 175
Whitaker, J. R., 644
White, A., 22, 464, 679, 680
White, D. C., 592
White, D. M., 287
White, E. A., 376
White, E. H., 759
White, F. G., 650
White, F. H., Jr., 286, 405
White, G., 137
White, I. G., 251
White, J. C., 316
White, J. G., 450
White, J. R., 499, 501
White, P. J., 367
White, R. M., 718
Whiteley, H. R., 185, 193, 197, 663
Whitfeld, P. R., 34, 37
Whitfield, G. B., Jr., 171, 494
Whitham, B. T., 741
Whiting, M. C., 773
Whitman, S. L., 464
Whitmore, G. F., 89
Whitney, P. L., 287
Whittaker, M., 557
Whittaker, V. K., 202, 205
Whittam, R., 528, 530, 540, 553, 557, 560
Whittemore, I. M., 718
Wiame, J. M., 371, 372
Wiberg, J. S., 107, 112, 192, 202
Wick, A. N., 569
Wickerhan, L. J., 228
Wickström, A., 168
Widdas, W. F., 567, 568
Wideburg, N. E., 368
Wieder, C. M., 94
Wieland, T., 419, 421, 422, 653
Wierzchowski, K. L., 31, 54, 70
Wiesboeck, R., 657
Wiese, H. F., 262
Wiest, W. G., 626
Wigand, G., 734
Wight, K., 465
Wikman, J. H., 368
Wilbrandt, W., 553, 567, 568
Wilcox, P. E., 275
Wilcox, R. B., 626
Wilcox, W., 126
Wild, D. G., 22, 464
Wilde, W. S., 559
Wildman, S. G., 120, 121
Wildman, W. C., 737
Wildy, P., 88, 89, 127, 129, 137
Wilharm, G., 452, 453
Wilhelm, M., 644
Wilhelmsen, J. B., 338
Wilken, J., 334
Wilkins, M. H. F., 26, 43, 54, 55
Wilkinson, G. R., 54, 55
Wilkinson, S., 172
Will, G., 281, 308
Willard, J. J., 175
Willi, A. V., 668
Williams, A. E., 338
Williams, A. L., 731
Williams, C. H., 615
Williams, C. M., 724
Williams, D. C., 681
Williams, D. E., 140, 494
Williams, E. J., 35
Williams, F. R., 609
Williams, H. E., 332
Williams, J. H., 166
Williams, M. A., 256
Williams, M. G., 129
Williams, R. C., 87, 89, 128, 129
Williams, R. H., 404
Williams, R. J. P., 624
Williams, R. P., 494, 497
Williams, T. L., 696
Williams, T. P., 174
Williams, W. J., 311, 312
Williams-Ashman, H. G., 416, 626, 680, 682, 683, 694, 695, 696
Williamson, D. H., 629
Williamson, J. R., 347
Willis, J. E., 361, 628
Wills, R. D., 249
Wilmanns, W., 197, 210
Wilson, A. C., 430
Wilson, A. N., 494
Wilson, A. R., 465, 466
Wilson, A. T., 157
Wilson, C. W., 35
Wilson, D. V., 166
Wilson, E. M., 191, 364
Wilson, H. R., 43, 54, 55
Wilson, J. D., 694, 695
Wilson, J. M., 762, 763, 771
Wilson, J. N., 134
Wilson, K., 737
Wilson, L. G., 403, 617
Wilson, M., 363
Wilson, P. W., 581, 740
Wilson, R. G., 443, 444
Wilson, S., 305
Wilson, T. H., 553, 554, 567, 568, 569, 570
Wilson, T. L., 722, 723
Wilson, V. W., Jr., 138
Winer, A. D., 620, 621, 623
Winkelman, J., 346, 719
Winkler, A., 481
Winkler, G., 728
Winstein, S., 655
Winter, M., 726
Wintermans, J. F. G. M., 216, 219, 226
Winters, D., 174
Winters, R. W., 554
Wintersteiner, O., 169
Winzler, R. J., 337
Wirostko, E., 469, 472
Wiseman, G., 569, 570
Witkop, B., 289, 290, 640
Witt, K., 338
Witten, P. W., 255
Wittenberg, J. B., 185
Wittenburg, E., 160, 174

Witter, A., 623
Witting, L. A., 249
Witting, M. L., 501
Wittman-Liebold, B., 306, 307
Wittmann, H. G., 120
Witz, J., 276
Witzel, D., 648
Witzel, H., 658
Wixom, R. L., 368
Woenckhaus, C. W., 342
Wold, F., 173, 290, 291, 342
Wold, J. K., 168
Wolf, C. F., 494, 497
Wolf, F. J., 494
Wolf, G., 328
Wolfe, D. E., 514, 524
Wolfe, L. S., 233, 234, 525, 527, 544
Wolfe, R. G., 619, 627
Wolfe, R. S., 618, 652
Wolfenden, R., 641, 654, 657
Wolff, I., 723, 725, 730
Wolff, J., 356, 357, 554, 559, 625, 701
Wolfman, M., 216
Wolford, R. W., 726, 738
Wolfrom, M. L., 155, 157, 162, 163, 167, 170, 174
Wollman, E. L., 46, 90, 116
Wolman, Y., 652
Wong, F. F., 740
Wong, J. T. F., 598
Woo, P. W. K., 156, 171, 172
Wood, B. J. B., 382
Wood, H. B., Jr., 160
Wood, H. C. S., 428, 436
Wood, H. G., 334, 777
Wood, J. L., 408, 409
Wood, J. M., 381
Wood, K. H., 663
Wood, R. M., 493
Wood, W. A., 339, 344, 420
Wood, W. B., 17, 104
Woodfin, B. M., 342
Woodford, F. P., 744
Woodman, R. J., 526
Woodruff, H. B., 493
Woods, D. D., 208, 209, 210, 433, 447, 628
Woods, K. R., 302
Woods, M., 465
Wool, I. G., 691, 693
Wooles, W. R., 249
Wooley, D. W., 561
Woolley, G. W., 493
Wooton, J. F., 661
Work, T. S., 132
Wotiz, H. H., 719, 733, 734
Wright, B. E., 185, 186, 190
Wright, B. S., 124
Wright, D. E., 570
Wright, E. M., 111
Wright, I. G., 174
Wright, J. H., Jr., 567, 568
Wright, L. D., 455, 456
Wriston, J. C., Jr., 375
Wrolstad, R. E., 731
Wu, M.-L., 520
Wulff, D. L., 72, 91
Wünsch, E., 663
Wyckoff, H. H., 308
Wylie, E. B., 326
Wyman, J., 274, 304, 314, 315, 316
Wyngaarden, J. B., 465, 468, 469, 472
Wyngarden, L., 195, 196, 197

Y

Yagi, K., 159, 390, 391, 429, 599, 600, 661
Yagi, T., 227
Yakovlev, V. A., 656
Yamada, E., 131
Yamada, H., 429, 611, 617, 618
Yamada, K., 339, 345, 358, 611
Yamada, M., 724
Yamaguchi, M., 406
Yamaguchi, S., 738
Yamakawa, T., 219, 230
Yamamura, Y., 257
Yamanaka, K., 339
Yamanaka, T., 584, 588, 592, 594, 595
Yamane, T., 30, 56, 59
Yamano, M., 599
Yamashita, Y., 612
Yamauchi, S., 605
Yamazaki, H., 121
Yanari, S. S., 663
Yang, J. T., 295
Yankeelov, J. A., 563
Yankofsky, S. A., 22, 50, 695
Yanofsky, C., 24, 376, 444
Yanovskii, M. I., 718
Yaoi, H., 126
Yap-Guevara, E., 493
Yarmolinsky, M. B., 116, 499
Yasunobu, K. T., 584, 617, 618
Yavit, J., 438
Yčas, M., 21, 50
Yielding, K., 356, 357, 625, 626, 678, 684, 685, 686
Yielding, L. K., 625
Yip, C., 384
Yokoyama, A., 216
Yonetani, T., 584, 585, 587
Yoneya, T., 376
York, J. L., 656
Yoshida, H., 560, 562, 564
Yoshikawa, H., 323, 474, 475
Yoshikawa, M., 334
Yoshimura, J., 158, 169, 172
Yoshizawa, K., 724
Yougner, J. S., 122, 734
Young, B. G., 96
Young, D. M., 286
Young, F. G., 693
Young, I. M., 557
Young, J., 120
Young, N., 160, 165
Young, R. D., 129
Young, R. J., 35, 641
Young, R. S., 198
Young, R. W., 663
Young, W. S., 759
Youngner, J. S., 133, 134
Youngs, C. G., 216, 736
Yphantis, D., 291, 292, 294, 661
Yuan, C., 261
Yu-cang, D., 286
Yuen, G. U., 159
Yugari, Y., 367
Yuki, S., 496
Yung, N. C., 165, 167
Yunis, A. A., 331
Yurugi, S., 646
Yu-Shang, Z., 286

Z

Zablin, L., 227, 364
Zachau, H. G., 29, 641
Zagorska, I., 248
Zahn, H., 290
Zaitlin, M., 121
Zakrzewski, S. F., 186, 187, 188, 189, 206, 628
Zalusky, R., 210
Zamecnik, P. C., 29, 30, 500, 517
Zamenhof, S., 67, 68, 70, 202
Zamir, A., 485
Zannoni, V. G., 374, 381
Zaslowsky, J. A., 656
Zatti, M., 343
Zavarine, R., 70, 493
Zbarsky, I. B., 31
Zee-Cheng, K. Y., 474
Zelis, R. F., 696
Zelkowitz, L., 112
Zemany, P. D., 756
Zepf, C., 476, 493, 497
Zepf, K., 476, 493, 497
Zerahn, K., 558
Zerner, B., 641, 647, 657, 668, 669
Zervas, L., 163

Zewe, V., 619, 620
Zhdanov, V. M., 89, 138
Zichichi, M. L., 64, 117
Ziegler, D. M., 581, 583, 607
Ziegler, I., 437
Ziegler-Günder, I., 435
Ziffer, H., 740
Zill, L. P., 226
Zillig, W., 17, 34, 35, 113, 114
Zilliken, F., 171, 328, 335
Zimm, B. H., 63
Zimmering, P. E., 641
Zimmerman, E. F., 474
Zimmerman, H. K., Jr., 159, 163, 171
Zimmerman, J. M., 53
Zimmerman, S. B., 107, 110, 112, 192, 294, 324, 325
Zimmermann, T., 139
Zinder, N. D., 114, 115
Zink, M. W., 369
Zinner, H., 157, 160, 161, 174
Zito, R., 315, 316
Zi-xian, L., 286
Zlatkis, A., 711, 713
Zobel, C. R., 54
Zobel, H., 723
Zomzely, C., 729
Zubay, G., 30, 35, 50, 54, 55
Zuber, H., 290
Zubkoff, P. L., 29, 35, 36
Zucco, P. S., 713
Zuckerkandl, E., 303
Zuelzer, W. W., 302, 313
Zumoff, B., 734

SUBJECT INDEX

A

A Configuration
of crystalline deoxyribonucleate, 54
Absorption frequencies
of carbohydrates, 155
Acetoacetate
formation and splitting of, 250–51
Acetobacter suboxydans
polyol oxidation in, 388
Acetobacter xylinum
as source of enzyme transforming precursor to cellulose, 333
Acetobromocellobiose
in synthesis of o-glycosides, 161
Acetoxycyclohexamide, see E-73
Acetylcholine
as a neurotransmitter in the central nervous system, 522
in ion transport, 561
response of phosphatidic acid cycle to, 562
Acetylcholine esterase
determinations in brain cortex tissue, 519
Acetyl coenzyme A
in fatty acid synthesis, 252
N-acetyl DON, see duazomycin A
Acetylgalactosamine
from acetylglucosamine, 337
role of both UDP and TDP linked sugars in transformation to, 337
Acetylglucosamine
as substrate in formation of sialic acid precursor, 337
in transfer to acetylgalactosamine, 337
role of both UDP and TDP linked sugars in transformation to acetylgalactosamine, 337
transfer of galactose to, 335
transfer to techoic acid backbone, 325
Acetyllactosamine
formation by enzymatic transfer of galactose, 335
Acetylmannosamine
as pyruvate acceptor in N. meningitidis, 337
as sialic acid precursor, 337
exzyme system in formation of, 337
Acetylmannosamine kinase
as key in sialic acid synthesis, 337
Acetylneuraminic acid
in capacity for complex formation by gangliosides, 527
liberation from gangliosides by V. cholerae neuraminidase, 526
specific Neisseria enzyme for, 323
Achromobacter pestifer
e-lysine acylase from, 367
Acid-base catalysis
general acid, 654
general base, 655
concerted acid-base, 656
Acridines
as mutagens, 67–69
Actidione
anti-tumor activity of, 497
prevention of antibody synthesis, 497
selective action on DNA synthesis, 497
Actinomycin
action on polymerase systems, 20
anti-tumor activity of, 19, 497
as a tool for study of DNA dependent and independent RNA synthesis, 498
effect on DNA viruses, 499
effect on Mengo virus, 21
effect on polio virus, 21
effect on replication of RNA viruse, 498
effect on vaccinia virus, 21
evidence for complexing with DNA, 498
inhibition of hormone induced enzyme levels by, 499
inhibition of RNA synthesis by, 19, 497

in turnover of messenger RNA, 499
structure of, 497, 380
Action potential
properties of, 540
Activation
by distortion, 658-59
examples of, 658-59
by oxidation, 652-53
of 1-C in sugar derivatives, 161
Active acetaldehyde
oxidation to acetylthiamine-pyrophosphate, 590
Active glycolaldehyde
identity with dihydroxy-ethylthiaminepyrophosphate, 344
Active transport
biological membranes as site of, 554
definition of, 553
mechanisms for, 555-56
Acylases
identity of acylase I with hippuricase, 392
properties of hog kidney enzymes, 392
Acyl enzyme
intermediate in chymotrypsin and related enzyme reactions, 647
Acyl transfer reactions
general base catalysis of, 654
importance of proton transfer in, 655
Adenine
analogs, 473-76
Adenosine diphosphate-glucose
as substrate for starch synthetase, 333
as substrate for wheat flour pyrophosphorylase, 323, 333
in Chlorella extracts, 333
Adenosine monophosphate
as activator of phosphorylase, 331-33
terminations in soluble RNA chains, 36
Adenosine triphosphatase
acceleration by steroids, 679
activation by sodium and potassium ions, 528, 529
determinations in brain cortex, 519
in brain microsomes, 566
in erythrocytes, 560
inhibition by ovabain, 559
inhibition by steroids, 680
in ion transport, 528, 531, 559
in nerve microsomal fraction, 559
in nerve mitochondrial fractions, 559
steroid induced activation, 679
Adenosine triphosphate
as energy source for ion transport, 557
content in rat brain correlated with glycine accumulation, 528
incorporation into coenzymes, 454
role in ion transport in nerve cells, 528
ATP:ADP Ratio
in Na^+-K^+ transport, 556
Adenoviruses
base composition of, 127
increased acid phosphatase in infected cells, 127
inhibition of growth by fluorodoxyuridine, 487
purification of, 126
stimulation of DNA and RNA syntheses by, 126
Adenyl cyclase
in b to a phosphorylase conversion, 331
Adenyl diphosphoglyceric acid
in blood, 323
Adenylic phosphodiester bonds
cleavage by nucleases, 26
Adipose tissue
as a source of free fatty acids, 245
Adrenal hydroxylase
in tyrosine metabolism, 383
mechanism of action, 384
substrates for, 383
Adrenocorticotropic hormone
in mobilization of free fatty acids, 248
Adsorption
of T-even bacteriophages
to lipopolysaccharide receptors, 101
to lipoprotein receptors, 101
to protoplasts, 101
Aerobacter
inducible citrate transport system in, 570
Aerobacter aerogenes
mannitol metabolism in, 338
regulation of biosynthesis of nicotinic acid in, 447
Aerobacter cloacae
conversion of glucose to fructose in, 336
Agathic acid
mass spectra of, 764
Aging
effect on fatty acid biosynthesis, 256
effect on lipid metabolisms, 249
Air
analysis of contaminants by gas chromatography, 737
Alanine
conversion from γ-hydroxyglutamate, 376
from decarboxylation of aspartic acid, 420
relation to lactate in oxidation of NADH, 355
transamination between malonic semialdehyde and an amino acid to form, 420
two independent pathways for biosynthesis of, 420
Alanine thiosulfate
as a precursor of rat urinary thiosulfates, 407
in sulfur transfer from mercaptopyruvate, 407
Alcaptonuria
absence of p-hydroxyphenylpyruvic acid oxidase, 381
absence of kidney homogentisic acid oxidase, 381
Alcohol dehydrogenase
actions of, 623-25
characteristics of, 623
inhibitors, 623
Alcoholism
antabuse in therapy of, 407
Alcohols
separation by gas chromotography, 724-25
Aldehyde dehydrogenases
malonic semialdehyde dehydrogenase from Pseudomonas, 628
$NADP^+$ linked enzyme from Acetobacter, 628
steroid sensitivity of, 628, 685
succinic semialdehyde dehydrogenase from monkey brain, 628
Aldehyde oxidases
actions, 604-05
characteristics of pig liver enzyme, 604
of rabbit liver enzyme, 604
FAD content, 604
Aldehydes
separation by gas chromatography, 725-27
Aldolase
of yeast, 341-42
reaction with dihydroxyacetonephosphate, 342
role of zinc ion in

activity, 342
Aliphatic acids
study at molecular level by gas chromatographic techniques, 720-23
Alkali denaturation
of hemoglobin, 314
Alkaloids
analysis by gas chromatography, 737
as electron donors, 538
Alkoxyglycerols
function in blood element formation, 223
in wound healing, 223
Alkylating agents
anti-tumor activity of, 501
mechanism of action, 501
Allergy
effect of 6-mercaptopurine on, 469
Alloisoleucine
in maple syrup urine disease, 369
Alpha helix
in globular proteins, 269, 271
Amber mutants
in coliphages, 112
of T_4 bacteriophage
relation to dCMP hydroxymethylase, 192
relation to DNA polymerase, 192
Amethopterin
increase of dihydrofolate reductase in leukocytes, 188
inhibition of thymidine synthesis, 206
mechanism of action, 480
resistance to, 480
Amicetin
α-methylserine in, 364
Amines
separation by gas chromatography, 727-28
Amino acid activation
regulation by steroids, 692
role of amino-acyl-sRNA synthetases in, 692
Amino acid decarboxylases
in various tissues, 388-90
Amino acid incorporation, 692-95
control by steroids, 692
stimulation by tetraiodothyroacetic acid, 695
Amino acid metabolism
leucine dehydrogenase in, 628
role of Δ^2 pyrroline-5-carboxylic acid dehydrogenase, 628
Amino acid oxidases, 599-601
characteristics of pig kidney enzyme, 599
characteristics of snake venom enzyme, 600
comparison with glycine oxidases of kidney, 391
in yeast grown in D, L-methionine, 391
mutants of Neurospora lacking, 391
reactive form of, 599
stable artificial Michaelis complexes of, 390
Amino acid sequence studies
in chymotrypsin, 288
in hemoglobin chains, 289
in horse heart cytochrome c, 288
in myoglobin, 288
in pancreatic ribonuclease, 289
in papain, 288
Amino acid side chains
identification of, 269
Amino acid transport
competition between amino acids for systems, 570
distribution of transporting systems, 569
effect of nonlolarity of side chains on, 570
exchange diffusion in, 570
influence of steroids on, 690
kinetics of, 570
number of systems for, 569
preference for L-configuration, 570
pyridoxal phosphate as a cofactor in, 570
requirement for α-amino and α-carboxyl groups in, 570
role of K^+ in "satellite transport," 570
sites involved in, 691
structural specificity in, 569
three-point attachment in, 570
types of, 553, 569-70
Amino acids
biosynthesis of branched chain, 367-70
control of RNA synthesis, 24-25
determination of structure by mass spectra, 768
mass spectra determinations, 765-70
metabolisms of, 355-92
possibility of separation by gas chromatography, 728
sequence studies, 288-90
solubility in urea, 287
transamination, 367-88
acylases in, 392
decarboxylases in, 388-90
pyridoxal phosphate in, 384-88
transport of, 569-70
D-amino acids
metabolisms of, 355-92
synthesis in S. fecalis R, 391
transamination of, 391
Amino acyl-sRNA synthetase
in amino acid activation, 692
regulation by steroids, 692
α-Aminoadipate
condensation of glyoxylate and α-ketoglutarate in biosynthesis of, 366
p-Amino benzoic acid
as structural part of folic acid coenzyme, 420
formation from shikimic acid and glutamine in yeast, 359
γ-Aminobutyric acid
distribution in brain tissue, 521
microanalysis of, 520
physiological role in brain, 515
4-Amino-4-deoxy folates
assay for, 188
Amino ethanol
from serine phosphatides, 364
4-Amino-6-hydroxypyrazolo (3, 4-d) pyrimidine
as an inhibitor of xanthine oxidase, 473
5-Amino-4-imidazolecarboxamide ribonucleatide transformylase
assay of chicken liver enzyme, 194
1-Amino-2-propanol
from threonine decarboxylation, 453
moiety of Vitamin B_{12}, 453
Aminopterin
inhibition of thymidylate synthetase, 206
Aminopurine
action of, 474-76
incorporation into DNA and RNA, 475
"tautomeric" mutations induced by, 491
4-Aminopyrazolo (3, 4-d) pyrimidine
conversion to ribonucleotide, 473
inhibition of de novo purine synthesis by, 474
mechanism of carcinostatic action, 474
metabolism in Cordyceps

militans, 473
2-Amino pyridinium cation
reaction with o-nitrophenyloxalate anion, 643
Amino sugars
as pneumococcal polysaccharide antigens, 169
key enzymes in synthesis of, 337
reduced incorporation in Vitamin A deficient rats, 328
role of 3'phosphoadenosine 5'phosphosulfate in impairment of synthesis of, 328
synthesis of, 169-72, 337
Ammonolysis
products of, 170
D, L-Amphetamine
as a substrate for adrenal hydroxylase, 383
α-Amylases
in polysaccharide degradation, 333
β-Amylase
from B. subtilis, 17
γ-Amylases
in polysaccharide degradation, 333
sources of, 333
Amylglucosidase
in Aspergillus niger, 333
Amylopectin β-limit dextrin
branching enzyme action on, 332
Amytal
inhibition of brain diaphorases I and II by, 591
inhibition of electron transport by, 678, 680
locus of action at NADH-flavin site, 591
Anakron
as a support in gas chromatography, 717
Analogs
as a pseudo-feedback inhibitor, 463
of folic acid, 479-81
glutamine, 476-81
purine, 464-76
pyrimidine, 481-93
UDP-glucose, 324
synthetic, 324
Angustmycin C, see psicofuramine
Anhydro-aspergillomarasmine B
mass spectra of, 775
Animal viruses
methods of study, 121-39
tissue culture growth of, 121
Anomerization
of acetylated alkyl β-d-glucopyranosides, 162
Antabuse
in treatment of alcoholism, 407
Antibiotics
in cancer chemotherapy, 493-501
interference with nucleic acid synthesis or function, 493-501
mass spectra of, 773-76
Antibodies
against denatured DNA in lupus erythematosus sera, 63
fragmentaion in papain, 415
inactivation of reduced fragments in presence of urea, 416
prevention of synthesis by Actidione, 497
reduction by mercaptoethanol, 415
Anti-cancer agents
antibiotics, 493-501
glutamine analogs, 476-81
miscellaneous agents, 501, 502
n-nucleosides, 166
purine analogs, 464-76
pyrimidine analogs, 481-93
Anti-folate resistance
correlated with increase of dihydrofolate reductase activity, 188
Anti-folates
comparison of inhibitory effects, 188
Apiezon greases
as liquid phase in gas chromatography, 714
Apolar bonds
effect of urea on, 287
in folding of globular proteins, 282
in interference of ribonuclease reformation by urea, guanidine, and phenols, 286
thermal stability of, 286
Apotryptophan pyrrolase
inhibition by hematin binding substances, 378
requirement for hematin, 378
Approximation
as sole function of a catalyst, 642
catalysis, 639-45
in molecular reactions, 640
9-β-D-Arabinosyladenine
lethality in E. coli, 475
D-Arabitol dehydrogenase
in A. aerogenes, 338
D-Araboascorbic acid
glucoronic acid pathway to formation of, 345
ARBO R viruses
inactivation of, 136
infectious RNA of, 136
Archibald method
of molecular weight determination, 89
Arginine
biosynthesis, 370-73
biosynthesis and repression of enzymes by in E. coli, 371
blocking of ornithine transcarboxylase by, 371
carbamyl phosphate as precursor for, 371
conversion from ornithine in Chlorella, 372
decarb oxy-oxidase in Streptomyces griseus, 372
metabolisms of, 370-74
Arginine-glycine transamidinase
repression by creatine, 372
Arginosuccinate lyase
conversion of citrulline to arginine in Neurospora, 372
Arginosuccinate synthetase
conversion of citrulline to arginine in Neurospora, 372
Argon
ionization detector in gas chromatography, 712
Aromatic acids
gas chromatographic procedures for analysis of, 723-24
Arsenite
inhibition of lipoyl dehydrogenase by, 399
Arylamine sulfokinase
action of, 687
action of steroids on, 687
Aryl sulphamates
enzymic synthesis of, 687
Ascorbic acid
catabolism of, 346
concentration in relation to cytochrome oxidase reduction, 587
glucuronic acid pathway to, 345
stimulation of dopamine hydroxylation by, 383
Ascorbic acid oxidase
coenzymes in, 407
Asparagine synthetase
from Lactobacillus arabinosus, 360
manganese ion requirement of, 360
Aspartase
purified from E. coli B, 360

Aspartic acid
conversion from glutamate by brain mitochondria, 358
decarboxylation to form β-alanine, 420
metabolism, 359-60
Aspartic acid decarboxylase
in Brucella abortus extracts, 420
of Clostridium perfringes, 359
pyridoxal phosphate as a coenzyme for, 420
Aspartic acid diethylester
mass spectra of, 766
Aspartic transaminase
inhibition of reconstitution by estrogen disulfates, 688
Aspergillus fumigatus
leucine synthesis in, 368
Aspergillus niger
amyl glucosidase in, 333
biotin synthesis in, 456
stimulation of biotin synthesis by thioctic and pimelic acids in, 456
Asymmetric activation
of ATP-ase by N+ and K+ on either side of erythrocyte ghost membranes, 560
Asymmetric distribution
of ATP-ase
in Deiter's nucleus, 540
in erythrocyte ghosts, 540
in squid axon, 540
"Atypical RNA"
accumulation during chloramphenical administration, 482
prevention of synthesis by azauracil, 482
Avian myeloblastosis virus
composition of, 130
Avian salt gland
cation transport in, 562
phosphatidic acid response to acetylcholine in, 562
Axon
electrical properties of, 540
Aza-adenine
inhibition of adenine utilization in protozoa by, 475
8-Azaguanine
action on conversion of IMP to adenylosuccinate, 465
action on induced Neurospora mutants, 464
bactericidal effect in relation to growth rate, 466
"DNA-RNA" complex containing, 464
effect on anaerobic glycolysis, 465
feedback inhibition effect of, 465
genetic aspect of resistance in neoplastic cells, 467
incorporation into subcellular fractions, 464
inhibition of anthrocyanin formation and riboflavin synthesis in plants, 466
inhibition of formate incorporation in bacteria, 466
inhibition of protein synthesis and accumulation of RNA in B. cereus, 464
in IMP dehydrogenase suppression, 465
in production of unstable nucleic acids, 464
mechanisms of action, 464
mechanism of cellular resistance to, 466
metabolism, 464-68
role in interference with messenger RNA, 464
role in substrate for RNA polymerase, 464
transfer of resistance to in leukemic cells in tissue culture, 467
transfer of resistance with isolated DNA in D. pneumoniae, 467
Azaserine
combination with ethidium bromide, 476
degradation in mammalian tissue, 478
inhibition of de novo purine biosynthesis by, 476
inhibition of glutamine mediated reactions by, 476
metabolism, 476-79
uptake in sensitive and resistant cell lines, 478
6-Azauracil
natural resistance of L. bulgarisus 09, 482
pathways of anabolism, 481-84
resistance to, 482
similarity to purine analog resistance, 482
resistant mouse lymphoma line, 482
resistant S. fecalis mutant, 482
role of conversion from nucleoside to nucleotide in sites of action, 481
Azauridine
inhibition and subsequent "pyrimidine starvation," 483
inhibition of vaccinia virus multiplication by, 484
potentiation by urethane, 484
potentiation of carcinostatic effect by chloramphenical, 483
selective production of remissions in human neoplasms by, 481
site of action of, 481, 482
temporary refractoriness to, 483
in relation to metabolism of orotic acid, 483
6-Azauridine-5'-monophosphate
competitive inhibition of decarboxylation of orotidylic acid to UMP, 481
correlation with antitumor activity, 481
4,4'-azobenzine disulfonyl chloride
as a bifunctional reagent, 291

B

B Configuration
of DNA, 54
B vitamins
coenzymes as active forms of, 419
enzymatic transformations of, 419
see specific vitamins
Bacillus cereus
effect of 8-azaguanine on, 464
Bacillus palustris
endodepolymerases for polysaccharides in, 327
Bacillus stearothermophilus
bacteriophages for, 115
Bacillus subtilis
β-amylase of, 17
bacteriophages of
transducing, 115
transforming, 115
DNA of, 17
β-gluconase in polysaccharide degradation, 334
L-leucine dehydrogenase in, 369
nicotinic acid biosynthesis in, 444
Bacteriophage
circular chromosome in, 90
control of RNA synthesis by, 24

conversion of O antigens in Salmonella, 116
effect of flouropyrimidines on, 487
genetic recombination in, 90-92
induced enzyme formation, 111-12
infection
proteins produced by, 86
precursor proteins, 108-12
metabolic independence of, 108
RNA, 114
single stranded DNA in, 113
see specific bacteriophages
Bacteriophages
Alpha phage of B. megatherium
DNA of, 49, 118
ϵ^{15}
in E group Salmonella infection, 326
ϵ^{34}
in E group Salmonella infection, 326
f2
amino acid incorporation by E. coli extracts in presence of f2 RNA, 115
burst size, 114
RNA content, 114
specific growth on F+ and Hfr E. coli K-12, 114
lambda phage of E. coli
chromosome of, 117
determination of infectivity of, 117
dinucleotide frequency of, 53
DNA of, 45, 53
heterozygotes of, 117
recombination in ultraviolet irradiated bacteria, 117
relation to deoxyribonucleases in lysogenic cells, 119
transducing, 117
virulent infection in E. coli W1485, 119
MS2 phage of Salmonella
base ratios of, 114
infections of protoplasts by, 114
RNA content, 114
transfer to ribosomal fraction, 114
ØR phage of Salmonella
magnesium ion requirement of, 113
ØX174 phage of E. coli
circular chromosome of, 90
DNA of, 16, 55, 113
infectious phenol extracts of, 113
protoplast infection by, 113
purification of, 113
replication of, 65
single stranded DNA in, 16, 113
transfer of, 113
ultraviolet spectrum of, 114
SP3 phage of B. subtilis
infectious DNA of, 115
SP8 phage of B. subtilis
DNA of, 49
replacement of thymine by 5-hydroxyuracil in, 49
SP10 phage of B. subtilis
transduction and transformation by, 115
T2 phage of E. coli
DNA of, 16, 46, 325
gentiobiosyl groups in DNA of, 325
RNA-DNA complex, 31
T3 phage of E. coli
DNA of, 45
head antigens, 113
sedimentation coefficient, 113
tail lengths of, 113
T4 phage of E. coli
cistrons A and B, 91
DNA of, 46, 325
mutants of, 18
RNA-DNA complexes, 31
T4 rII
tautomeric shifts resulting in mutation or recombination, 92
T6 phage of E. coli
gentiobiosyl groups in DNA of, 325
T-even phages of E. coli
structure of, 95
Bacterium linens
pantothenic acid studies in, 420
Base catalysis, 654
Base composition
of DNA, 27, 35, 116
of RNA, 18, 23, 27, 35
Base pairing
in RNA replication, 15-16
Benzimidazolyl cobamide coenzyme
structure of, 454
synthesis of, 455
Benzocaine
caffeine inhibition of hydrolysis of, 642
Bifunctional reagents
covalent attachment through two different functional groups, 290
ferritin, 290
in formation of intermolecular cross linkages, 290-92
Bile acids
mass spectra of, 763
Biochemical genetics
linear order of markers, 90
Biogenesis
of water soluble vitamins, 419-56
of pteridine compounds, 435-37
Biohydrogenation
of unsaturated fatty acids, 263
Biological membranes
as semiconductors, 539
as the site of active transport, 554-56
equivalence of function of oriented PLP, phosphokinase, and phosphatase or adenosinetriphosphatase on, 531
inactivation in transport, 555
phospholipids in, 215
transport models using erythrocyte ghosts, 554
protoplasts in galactoside transport, 554
transport through, 527-32, 554-56
Biological oxidations
disulfides in, 617
ferrodoxin in, 618-19
flavoproteins in, 598-616
general, 579-629
modified enzymes in, 595-98
nicotinamide nucleotide dehydrogenases, 619-29
photosynthetic pyridine nucleotide reductase, 618-19
pyridoxine phosphate-metal chelates in, 617-18
respiratory chain, 579-95
Biological transport
active, 553
amino acids, 569-72
carrier mediated diffusion, 554
ions, 556-67
mechanisms for, 555
sugars, 567-69
types of, 553-72
"downhill" and "uphill," 553
Biosynthesis
in uninfected cells, 86
of capsular polysaccharides, 327-28
of cartilage in explanted somites by substance

from chick embryonic spinal cord, 328
of fatty acids, 252-59
in microorganisms, 257
in plants, 258
of nucleoside diphospho sugars, 323
of RNA, 15-28
of triglycerides, 263-64
see specific substances
Biotin
biogenesis, 455-56
deficiency in relation to glucose utilization in rats, 335
relation to pimelic acid, 455
stimulation by thioctic and pimelic acids, 456
structure of, 456
Bipolar bodies
intracellular particles associated with diaminopimelate decarboxylase activity in, 365
Blood elements
function of glyceryl ethers in radiation protection of, 223
Bohr effect
mechanism of, 315
role of histidyl residues in, 315
Botyl alcohol II
functions of, 223
Brain
lipids
composition of, 516
distinctive neuronal and glial patterns, 516
separation of, 515-16
metabolism in, 513-45
see neurochemistry
monoglyceride phosphorylating system in, 222
nucleic acids in, 516
phospholipid content, 217
phospholipoproteins
composition of, 529
phosphokinase for, 529
role in ion transport, 529-32
polysaccharides in, 516
proteins in, 516
rat brain lecithin, 221
servomechanisms in, 515
sphingomyelin in, 228
undefined molecules in, 515
Branched chain amino acids
biosynthesis of, 367-70
regulation of biosynthesis, 369
Branching enzyme
action on amylopectin β-limit dextrin, 332
in rat liver, 332
Bratton-Marshall
assay for tetrahydrofolate, 194
test for arylamines, 195
Brevibacterium pentoso-aminoacidicum
fermentation of pentoses by, 339
Bromodeoxyuridine
in radiation sensitivity, 70
mechanism of sensitivity, 71
mutagenesis by, 67
Bromouracil
as a "tautomeric" mutagen, 490
competitive anabolism with thymine, 490
in reversion of mutations, 491
incorporation into cellular DNA, 490
mechanism of mutagenesis, 95
prevention of DNA replication by, 493
site of action, 490
tolerance to, 493
variation in equilibrium centrifugation pattern of DNA containing, 492
Brucella abortus
utilization of erythritol in, 338
n-Butyl ammonium acetate
as a catalyst, 648

C

C-1 conformation
preference for in sugar transport, 567
Caffeine
inhibition of benzocaine hydrolysis, 642
Calcium phosphate
use in DNA fractionation, 51
Cancer
biochemistry of, 463-502
chemotherapy of, 464-502
DNA modification in, 73
tissue
lactic acid production in, 340
Candida tropicalis
amylase in transglucosidation, 333
Candida utilus
dehydrogenases of, 629
Capsid
membrane surrounding, 89
of virus particles, 84
Capsomeres
number in various virus groups, 88-89
Capsular polysaccharides
of pneumococci, 327
synthesis of, 327
Carbamyl aspartate
synthesis in pigeon liver, 360
Carbamyl kinase
general aceto kinase activity of, 370
in liver, 360
Carbamyl phosphate
alternate pathway of synthesis in Agaricus bisporus, 372
as an intermediate in citrulline synthesis in mushrooms, 478
as precursor in arginine and pyrimidine biosynthesis, 371
inhibition by DON, 478
Carbohydrates
chemical shifts in, 156
chemistry of, 155-75
chromatography of, 157, 735, 743
configuration of, 155-57
conversion procedures for derivatives for gas chromatography, 735, 743
infrared spectra of, 155
ionophoresis of, 157
mass spectra of, 771
metabolism, 321-48
effect of X ray on enzymes of, 332
thiamine dependent steps, 532
methods, 155-58
optical rotation studies, 158
oxidation of, 158-59
oxidizing enzymes, 629
polarography of, 158
resonance spectra of, 155
^{14}Carbon dioxide
estimation in nerve cells, 522
Carbonic anhydrase
distribution in Deiter's nucleus, 522
distribution in nervous tissue, 521-22
Carbonium ion
mechanism in substitution reactions of sugars, 651
β-Carboxy-β-hydroxy isocaproic acid
as a metabolite in leucine biosynthesis, 368
Carcinogenesis
deletion theory of, 502
"minimal deviation" tumors in, 502
Carcinogens
intercalation in DNA backbone, 74

mechanism of action, 73
Cardiac glycosides
inhibition of Na^+-K^+ pump, 568
Carotenes
separation by gas chromatography, 731
Carrier gases
for gas chromatography procedures, 717
"Carrier-mediated diffusion"
in movement down an electrochemical or chemical gradient, 554
of sugars in erythrocyte ghosts, 554
Carrier transport
by locally situated macromolecules in biological membranes, 555-56
Cartesian diver
technique in study of enzyme distribution in nerve cells, 521-22
Cartilage
inducing substance in chick embryonic spinal cord and relation to mucopolysaccharide biosynthesis, 328
Catalase
possible functional complex with aldehyde oxidase, 604
Catalysis
by approximation of reacting molecules, 639-45
by distortion, 658-59
covalent, 645-53
general acid-base, 653-58
in charged micelles, 643
in ice, 643
nucleophilic, 645-53
Catecholamines
in release of free fatty acids, 247-48
Celite 545
as a support in gas chromatography, 717
Cell division
involvement of -SH and S-S bonds in, 414
Cell membrane
effect of nutritional deficiencies on, 327
Cell walls
alterations due to nutritional deficiencies, 326-27
components, 325-28
effect of -SH reagents on, 416
of Salmonella, 325
polysaccharides in, 325-28
S-S bonds in integrity of, 416
sugar nucleotides as precursors of polysaccharides in, 325
synthesis
CDP-ribitol as a precursor, 326
effect of penicillin on, 326
effect of Vancomycin on, 326
interference by fluorouracil in E. coli, 488
Cellulose
precursor for, 333
Cellulose acetate gels
use in isolation of DNA, 31
Cephalin
incorporation of D, L-serine-3-C^{14} into, 363
Ceramide
beef brain content of, 516
Cerebrosides
assay method, 230
beef brain content of, 516
in normal and abnormal states, 230
Cesium chloride
in gradient density separation, 31, 84
Chalcomycin
methanolysis of, 172
preparation of chalcose from, 172
preparation of mycinose from, 172
Chalcose
derivation, 172
physical properties of, 172
"Charge transfer forces"
in complex formation, 642
Chelates
pyridoxal phosphate-copper
in catalysis, 617
Chemical shifts
in carbohydrate configuration, 156
Chimyl alcohol I
functions of, 223
Chitin
in purification of TMV, 87
use in ion exchange chromatography, 87
Chloramphenicol
in accumulation of "atypical RNA," 482
inhibition of enzyme stimulation by hydrocortisone, 386
inhibition of protein synthesis by, 22
mechanism of action, 500
relation to puromycin, 500
specific inhibitor of protein synthesis, 500
Chlorella
ADP-glucose in extracts of, 333
conversion of ornithine to citrulline and arginine in, 372
sulfolipid content of, 226
Chloroform-methanol extraction
method for isolation of brain lipids, 516
Chloroglycosides
breakdown to amino sugars, 170
p-Chloromercuribenzoid acid
initiation of insulin action by, 413
Chloroplastids
spinich, 226
sulfolipid from, 226
Chloroplasts
localization of glycolipids in, 219
spinich leaf
fatty acid synthesis in, 258
6-Chloropurine
inhibition of IMP to GMP conversion, 473
Chlorpromazine
as an electron donor, 538
Cholesterol
beef brain content, 516
mucosal esterification, 243
Choline
role in free fatty acid oxidation and phospholipid turnover, 248
Cholinesterase
distribution in nervous tissue, 521
Chondroitin sulfate B
iduronic acid in, 328
Chorionic gonadotropin
effect on phosphorylase activity, 332
Chromatography
advantages over electrophoresis in separation efficiency, 302
gas, 709-46
in separation of amino sugars, 157
hemoglobins, 302
saccharides, 157
of carbohydrates, 157
Chromatophores
as antigens, 415
diameter of, 415
disulfide bonds between subunits of, 415
sedimentation constant of, 415
Chrombacterium violaceum

as a source of D-glycero-D-mannoheptose, 321
Chromium
attachment to hemoglobin, 314
Chromosomes
effect of ecdysone on morphology, 697
of bacteriophage, 90
Chromosorb W
as a support in gas chromatography, 717
Chylomicrons
enzymes active on, 244
metabolism of, 244
sites of disposal, 244
Chymotrypsin
amino acid sequence studies, 288
Chymotrypsinogen
isomorphous derivatives of, 276
Ciliates
DNA of, 48
Cinchomeronic acid
as a precursor of nicotinic acid in bacteria, 445
structure of, 445
Cistrons
A and B of bacteriophage T4, 69, 91
Citrulline
biosynthesis in Agaricus bisporus, 372
carbamyl phosphate as an intermediate in synthesis of, 478
conversion from ornithin in Chlorella, 372
conversion to arginine in Neurospora, 372
inhibition by DON, 478
Clostridium acidi-urici
formiminoglycine formino transferase from, 195
Clostridium butyricum
lipids of, 221
Clostridium cylindrosporum
formiminoglycine formino transferase from, 195
L-serine hydroxymethyl-transferase from, 190
Clostridium kluyveri
β-alanine and pantothenic acid formation in, 421
fatty acid synthesis in, 257
Clostridium lentoputrescens
glycine reduction in, 362
Clostridium perfringens
aspartic acid-β-decarboxylase of, 359
Clostridium propionicum
β-alanine and pantothenic acid formation in, 421
Clostridium sticklandii
glycine reduction in, 362
Clupeine
action reversed by gangliosides, 526
in production of hypopolarization in cerebral cortical slices, 526
Cobalamin
requirement by methionine-less E. coli mutants, 207
Cobinamide
in Vitamin B_{12} synthesis, 452
Cobrynamide
in Vitamin B_{12} synthesis, 452
Coding
of proteins by virus nucleic acid, 86
properties of soluble RNA, 24
Coenzyme A
cysteine as a precursor, 422
formation from pantothenic acid, 422-25
Coenzyme Q
redox potential of, 581
role in electron transport, 581-84
Coenzyme Q H_2-cytochrome-c-reductase
constituents of, 582
isolation of, 582
Coenzymes
as active forms of B vitamins, 419-47
Colicines
identity with O antigens, 102
purification of, 102
Collagen
hydrophobic bonds in, 535
incorporation of hydroxyproline into, 375
Column packings
for gas chromatography, 709
Compartment A
of phosphatidic acid, 562
Complementarity
as measured by RNA-DNA complex formation, 22
of DNA to ribosomal RNA, 22
Complementary RNA
in phage replication, 104
messenger, 49-51
T2 RNA specificity with denatured T2 DNA strands, 104
Compound G
as an intermediate in riboflavin biosynthesis, 426
conversion to Compound V, 427
conversion to riboflavin, 427
reaction with diacetyl, 426
similarity to riboflavin, 425
Compound V
conversion from Compound G, 427
similarity to riboflavin, 425
Condensation
reactions
in synthesis of o-glycosides, 163
Koenig-Knorr reactions, 164, 170
tetrahydrafolate in, 189, 211
Conformational changes
in ion transport by macromolecules, 563
"Conservative" replication of DNA, 63
Contractility
hydrophobic bonds in, 535
role of electron transfer reactions in, 539
Conversion
of b to a phosphorylase, 331
Copper
role in cytochromeoxidase activity, 585
Copy choice hypothesis
of DNA synthesis, 85
Cordyceps militans
4-aminopyrozolo(3,4-d) pyrimidine metabolism in, 473
Corn oil
induction of change in tissue lipids by, 249
Corpus luteum
effect on phosphorylase activity, 332
Corrin ring
moiety of vitamin B_{12}, 450
similarity to porphyrin ring, 452
source of methyl group in, 452
Corticoids
in increased production of glutamic-alanine transaminase, 385
Corynebacterium
leucine biosynthesis in, 368
Counter current distribution
in purification of RNA species, 28
Counter transport
of sugars in various tissues, 568
Covalent catalysis, 645-53
criteria for identification, 645
Coxsackie virus
comparison with polio

strains, 135
Creatine
in repression of liver arginine-glycine transamidinase, 372-73
Cross section ionization detector
use in gas chromatography, 713
Crystal lattice
effects on protein structure, 279
Crystalline state
related structure changes in protein-small molecule interactions, 281
Curamycin
acid hydrolysis products, 172
Curare
affinity for gangliosides, 527
Cyanide ion
as a nucleophilic reagent, 648
Cyanocobalamin, see Vitamin B_{12}
Cyanoethylmethyl silicones
as selective liquid phase in gas chromatography, 716
2-Cyanoethyl phosphate
condensation to yield phosphomonoesters, 173
in preparation of P^{32} labelled nucleotides, 173
Cyclic peptide
self induced hydrolysis in water, 641
Cyclitol
synthesis in parsley leaves, 338
Cyclodehydrase
ATP requirement, 196
in direct conversion to N^5-N^{10} methenyltetrahydrofolate, 196
Cyclohexamide, see Actidione
Cycloserine
inhibition of pyridoxal linked enzymes by, 388
Cystathionase
relation to cysteine desulfhydrase, 410-11
Cysteine
as a precursor of thiazole, 441
biosynthetic pathway, 409
Cysteine desulfhydrase
inhibition by mercaptoethanol, 411
relation to cystathionase, 410-11
Cysteine -S-sulfonate
in biosynthetic pathway of cysteine, 409
Cystine
cleavage by cystathionase in Neurospora mutant, 410
Cystine reductase
lack of evidence for specific enzyme, 405
Cystinosis
cystine accumulation in kidney and other tissues in, 406
S-S bond reduction in, 406
Cytidine diphospho glucose
Salmonella paratyphi enzyme active on, 323
Cytidine diphospho glycerol
Lactobacillus arabinosus enzyme active on, 323
Cytidine diphospho ribitol
as a cell wall precursor, 326
penicillin action on, 326
Staphylococcus aureus enzyme active on, 323
Cytidine monophosphate-sialic acid
enzymes active on, 323
Cytidine triphosphate
synthesis
glutamine as primary amino donor for, 478
Cytoarchitectural features
correlated with electrophysiological features in brain cortex, 520
Cytochrome a
possible combined activity with cytochrome a_3 in cytochrome oxidase, 585
Cytochrome a_3
possible combined activity with cytochrome a in cytochrome oxidase, 585
Cytochrome b
constituents of, 583
purification of, 583
redox potential of, 583
role in electron chain, 582
Cytochrome b_2
characteristics of, 612
derivatives of, 612
Cytochrome c
characteristics of, 583
N-terminal amino acid sequence of, 584
redox state of, 589
Cytochrome c_1
characteristics of, 583
purification of, 583
Cytochrome c reductase
in oxidation of NADH, 579
Cytochrome oxidase
activity connected with nitrite reductase activity in Pseudomonas, 595
assays for, 587
cytochrome a and a_3 in activity of, 585
decreased activity after sciatic nerve stimulation, 518
determinations in brain cortex, 519
effect of tricyanoaminopropene on, 524
in mammalian preparations, 584
kinetics of, 587
of Pseudomonas, 587
physical properties of, 584
reduction of, 587
role of copper in, 585
water solubility of, 587
Cytochromes
new
properties of, 592

D

Darmstoff
as an acetal lysophosphatidic acid, 561
in sodium transport, 561
in stimulation of intestinal contraction, 561
Degradation
of disaccharides, 335
of polysaccharides, 333-34
of RNA, 15, 37
of sugars, 160-61
Deiter's nucleus
distribution of carbonic anhydrase in, 522
Deletion hypothesis
modification by studies on "minimum deviation" tumors, 502
of carcinogenesis, 502
Denaturation
of DNA, 52
agents, 57, 59
conditions affecting, 55
partial denaturation, 58
reversibility, 60
see Deoxyribonucleic acid
Denervation
increase of Na^+ and K^+ secretion after, 562
De novo synthesis
of purines
inhibition of, 476
of pyrimidines
negative feedback in, 483
Density gradient centrifugation
cesium chloride in, 31, 84
in nucleic acid studies, 47, 51, 292
in virus isolation, 87
in virus purification, 84

Deoxyadenosine
inhibition of DNA synthesis by, 476
Deoxycorticosterone
activation of latent ATPase by, 679
Deoxycytidinetriphosphatase
phage induced enzyme, 110
Deoxycytidylate hydroxymethylase
assay, 191
from bacteriophage infected E. coli, 191
production by amber mutants, 192
relation to 5-hydroxymethylcytosine in phage, 191
Deoxyribonucleic acid
A form, 54
analogs, 493
changes in physical properties after incorporation of, 492
B forms, 54
bacterial, 46
bacteriophage, 43, 45, 46, 116
inhibition of, 107
bonding of, 57
complementary, 19, 27
complexes with RNA, 15
denatured, 52, 55-63, 100
antibody against in LE serum, 63, 100
depolymerization by Mitomycin C, 21
deproteinization, 44-45
Drosophila egg, 44
fractionation, 51-52
guinea pig, 48
hydrophobic bonds in, 535
infectious, 43
mammalian sperm, 44
modification in relation to cancer, 73-74
molecular configuration, 54-55
mouse, 48
mutations, 63-69
nucleotide composition, 47-49
nucleotide sequence, 52-54
phage precursor, 103
photometric determination in nerve cells, 522
properties of, 44, 55
radiation sensitivity, 70-73, 492
renaturation, 52, 55-63
hybrid molecules in, 52, 62
reversal of denaturation, 55
satellite, 48
single stranded, 16, 51, 94, 113
synthesis
by extracts of infected cells, 125
inhibition of, 107
mechanism of replication, 63-69
template for RNA synthesis, 16-25, 27, 108
transfer of resistance with, 467
uncoating in vaccinia infection, 124
virus, 49
Deoxyribonucleic acid-cellulose
chromatography columns, 18, 31
homologous binding of RNA, 32
Deoxyribonucleic acid polymerase
in biosynthesis of DNA, 65
increase by triphosphates, 111
in de novo synthesis, 66
Deoxyribonucleic acid-ribonucleic acid complexes
8-azaguanine in, 464
fractionation from mammalian cell nuclei, 32
incorporation of radioactivity into, 33
isolation of, 22, 30
naturally occurring, 50
role in Luria-Latarjet effect, 104
Deoxyribonucleic acid viruses
electron microscope observation, 122
infectious extracts, 129
Deoxyribonucleic acid-xanthine
ineffectiveness as a mutagen, 95
Deoxyribonucleohistone
configuration of, 54-55
in regulation of genetic activity, 73
Deoxyribose
pathway of synthesis, 111
Deoxyribose-1-phosphate
mutase conversion, 339
Deoxyribose-5-phosphate
mutase conversion, 339
Deoxy sugars
pathway of synthesis, 159-60, 339
Deoxyuridine-thymidine kinase
loss of activity in analog resistant cells, 489
Derivatives
for gas chromatography analysis, 743
Desaturation
of fatty acids, 259
Deuterium
isotope effects in catalysis, 656
KH_2O/KD_2O ratios for catalyses, 657
Dextran
microbial degradation, 334
Dialkyldithioacetal derivatives
of sugars, 174
Diaminopimelic acid
in bacterial cell walls, 101
inhibition by fluorouracil, 488
in lysine synthesis, 366
2,6-Diaminopurine
enzymes active on, 474
incorporation into nucleic acid, 474
resistance to, 474
correlated with AMP pyrophosphorylase, 474
correlated with excretion of adenine and uracil, 474
Diaphorases
from liver, 610
inhibition
by amytal, 591
by dicumoral, 610
sources of, 610
Straub, 607
identity with lipoyl dehydrogenase, 579
o-Diazoacetyl-L-serine, see azaserine
6-Diazo-5-oxo-L-norleucine
citrulline synthesis, 476
de novo purine biosynthesis, 476
glutamine-mediated reactions, 476
Dichroic ratios
for DNA, 54
Dicyclohexylcarbodiimide
in polymeration of mononucleotides, 173
Dideoxyhexoses
in cell walls, 325
relation to UDP galactose-4-epimerase, 325
Diethylaminoethyl cellulose dextran
chromatography columns, 30
oligonucleotide mapping, 33
Diethyldithiocarbamate, see Antabuse
Diethylstilbseterol
inhibition of $NADH_2$ cytochrome-c-reductase, 678

sites of inhibition, 678
p,p'-Diflavo-m,m'-dinitrodiphenyl sulfone
intramolecular bridge formation, 291
Diglyceride kinase
in ATP-ase formation, 564
in erythrocyte membrane, 563
in ion transport, 563
Dihydrofolate
conversion to tetrahydrofolate, 186-89
de novo biosynthesis, 186
structure, 204
use of DEAE cellulose in isolation, 205
Dihydrofolate reductase
assays, 186-89
evidence for single enzyme, 187
purification, 186
Dihydroorotic dehydrogenase
ESR data, 615
reaction with NA DPH, 615
Dihydroshikimic acid reductase
$NADP^+$-linked, 629
Dihydroxyacetone phosphate
reaction with aldolase, 342
α,β-Dihydroxyacid dehydrase
correlation with requirement for valine and isoleucine, 368
in microorganisms, 368
in plants, 368
in vertebrates, 368
Dihydroxyethylthiamine pyrophosphate
identity with active glycolaldehyde, 344
isolation of, 344
3,4-Dihydroxyphenylalanine decarboxylase
inhibitors, 389
substrates for, 388
3,4-Dihydroxyphenylethylamine
conversion to epinephrine, 383
stimulation of hydroxylation by ascorbic acid, 383
Diisocyanates
as bifunctional reagents, 290
in coupling ferritin to antibody, 290
Dimerization
of pyrimidine by ultraviolet, 91
Dimerizers
in conversion of sugar molecules, 568
in erythrocyte membranes, 568
5,6-Dimethylbenzimidazolyl cobamide
moiety of Vitamin B_{12}
ATP incorporation, 454
structure of, 453
Dimethylglycine dehydrogenases
of liver mitochondria, 616
o-Diphenol oxidase
in oxidation of N-acetyl dopamine, 383
in tyrosine utilization, 383
molecular weight, 383
Diphospho sugars
biosynthesis, 323-24
in glycosididic bond formation, 321
nucleoside, 321
Diplococcus pneumoniae
DNA in transfer of resistance to azaguanine, 467
Disaccharides
degradation of, 335
synthesis of, 334
Disulfide bonds
enzymatic processes involving, 399
formation of, 404, 406-7, 412-13
in cell division, 414
in physiological processes, 412
in reinforcement of hydrogen bonds, 416
in subcellular structure, 412, 415
nonenzymatic reduction by GSH, 404
reduction
in cystinosis, 406
with thiol formation, 406
role in photophosphorylation, 415
Disulfide-dithiol interconversion, 403
Disulfide groups
in proteins, 399
reduction of, 402
Disulfide peptide hormones
effect on membrane permeability, 412
exchange reaction, 412
mechanism of action, 412
Disulfides
formation, 399-404
in biological oxidation, 617
in cell division, 414
in cell walls, 416
in photosynthesis, 415
Diuretic process
role of pitressin, 412
role of thiol groups, 412
-SH - S-S exchange reaction
effect on membrane permeability, 412
DNA, see Deoxyribonucleic acid
Downhill transport
definition of, 553
of sugars, 567
Drosophila eggs
DNA from, 44
Drugs
study by gas chromatography, 739
Duazomycin A
inhibition of cytidine nucleotide synthesis, 477

E

E Group Salmonella
bacteriophage infection, 326
modification of O antigens, 326
modification of sugar sequence, 326
E-73
anti-tumor activity of, 497
Earthworm giant axons
electrical properties of, 540
Ecdysone
effect on chromosome morphology, 697
correlation with RNA synthesis, 697
ECHO viruses
separate grouping of Reo viruses, 136
Ecteola cellulose
in DNA fractionation, 51
TMV purification, 87
Edman degradation
of hemoglobin, 289
Ehrlich ascites tumor
incorporation of labelled metabolite, 20
inhibition of RNA synthesis in, 20
Electrical excitability
of nerve tissue, 540
effect of protamine, 526
effect of suramin, 526
Electrolyte transport, 556
role of phospholipids, 561
Electron density
shifts in ATP, 561
Electron donors, 538
Electron microscope
in visualization of viruses, 84
stains for, 88
Electron transfer
in contractile response, 539
Electron transport
biological oxidations, 579-629
mechanism between NADH and glycine, 362
role of thiamine pyrophos-

phate, 590-91
steroid induced changes, 677-79
Electrophilic catalysis
examples, 651-53
in activation by oxidation, 652-53
Electrophoresis
in protein structure analysis, 293
in separation of hemoglobin components, 302
Electrophysiological features of brain cortex
correlated with cytoarchitectural features, 520
Elongation
of fatty acids, 254
role of pyridoxine, 255
Embden-Meyerhof pathway
extramitochondrial enzymes in, 340
hexokinase reaction in, 341
Encephalomyocarditis viruses, 131
infectious RNA from, 132
End Organs
alteration of nerve cells, 518
Endomyces
α-Amylase from, 333
Endonucleases
in RNA degradation, 34
Endopolymerases
for pneumococcal polysaccharides, 327
Enolase
muscle, 342
yeast, 342
Enolization
of ketones
carboxylate catalyzed, 642
Entner-Doudoroff pathway
in carbohydrate metabolism, 344-46
induction by gluconate, 344
in degradation of alginic acid, 344
in Pseudomonas, 344
Enzyme conformation
evidence for and against, 659
"induced fit," 659
Enzymes
as nucleophilic catalysts, 646
mechanism of action, 639-69
models, 640
modified, 595
phage induced, 111
pyridoxal phosphage dependent, 687
synthesis
effect of steroid hormones, 698
Eosomes
base ratios, 21
relation to messenger RNA, 21
Epimerization
of glucuronic acid, 328
Epinephrine
conversion from dopamine, 383
effect on phosphorylase level, 331
in release of free fatty acids, 248
methylation from norepinephrine, 384
Epinine
as a substrate for adrenal hydroxylase, 383
Episomes
DNA of, 49, 116
site of replication after transfer, 49
Equilibrium ultracentrifugation
molecular weight determinations by, 89, 292
Erythritol
as a growth factor, 338
phosphorylation of, 338
role in tissue tropism, 338
Erythritol dehydrogenase
action on polyols, 629
NAD^+specificity, 629
Erythrocytes
DNA from, 46
diaphorase from, 610
ghosts
as a biological membrane model, 554
asymmetric activation of ATPase in, 560
ion transport in, 554
phospholipids in, 217
sugar transport in, 568
Erythro-dihydrosphingosine
from palmityl Coenzyme A and serine, 364
Erythroleukemia virus
purification of, 131
Escherichia coli
9-β-D-arabinosyladenine lethality in, 475
aspartase from, 360
biosynthesis of arginine, 371
histidine, 374
NAD, 446
nicotinamide deamidase, 447
nicotinic acid, 444
ornithine, 371
pyridine nucleotide, 447
effect of flourouracil, 488
Mitomycin C, 494
-SH reagents, 416
extracellular glutathione reductase in, 401
folic acid reductase from, 628
β-galactosidase of, 17
lipoyl dehydrogenase of, 607
methylated nucleotides in soluble RNA of, 23
nitrate reduction in, 594
resistance to 2,6-diaminopurine, 474
S-S bonds in cell wall integrity, 416
spheroplast formation, 488
transamination in, 450
transducing phage DNA in, 44
tryptophan pathway in, 377
UDP-glucose synthesis in, 324
Esterification
of fatty acids during absorption, 242
Esters
of aliphatic acids and alcohols
separation by gas chromatography, 729
Estrogens
as electron donors, 538
induction of $NDAH_2$ oxidase, 683
inhibition of aspartic transaminase reconstitution, 688
mediation of oxidation, 682
Ethanol
in increase in liver fat, 245
oxidation of, 338
Ethanolamine
lipids
distribution of, 217
precursors, 363
Ethidium bromide
combination with azaserine, 476
inhibition of purine incorporation, 476
Ethyl methane sulfonate
product of mutational heterzygosis, 93
Ethylene glycol isophthalate
as a selective liquid phase in gas chromatography, 716
Ethylene glycol succinate
as a selective liquid phase in gas chromatography, 716
Euglena gracilis
in polydesaturation, 261
β-lactate dehydrogenase from, 614
α-linolenic acid in chloroplasts, 261

Exchange diffusion
in amino acid transport, 570
Exercise
in lipid mobilization, 248
Exonucleases
in RNA degradation, 34
Eyestalk extract
inhibition of glycogen synthesis by, 330

F

Factor B, see cobinamide
Factor Via, see cobrynamide
Fasciola hepatica
metabolic pools of glycogen in, 332
Fasting
in mobilization of lipids, 247
Fatty acids
biosynthesis, 252-64
in microorganisms, 257-58
in plants, 258-59
mitochondrial systems in, 254
nonmitochondrial systems in, 252
role of -SH groups, 399
conversion
of leucine, 369
to triglycerides, 246-47
elongation of, 254-55
formation of monoenoic acids, 259
formation of polyenoic acids, 261
gas chromatography structural studies, 744
methylation of, 258
mobilization of, 247-49
oxidation of, 250-51
precursors, 253
release of, 247
saturation and desaturation, 259-63
sources, 245
triglycerides, 263-64
F-duction
in bacterial conjugation, 54
Fermentation
of pentoses, 339
Ferredoxin
catalysis in chloroplasts, 618
characteristics of, 618
coupling by, 618
in biological oxidation, 618-19
in reduction of nitrite to ammonia, 618
position in electron chain, 618
sources, 618
Ferritin
antibody coupling, 290
as a bifunctional reagent, 290
Ferrohemoglobin
crystal structure, 280
effect of oxygen on, 310
solubility, 313
Fibroma-myxoma transformation
relation of vaccinia virus uncoating system, 124
Fingerprinting
of abnormal hemoglobins, 311
of peptides, 311
Firebrick
as a support in gas chromatography, 717
Firefly luminescence
in nucleoside triphosphate detection, 96
Flagellates
DNA from, 48
Flavin-adenine-dinucleotide
binding
noninvolvement of sulfhydryl groups, 614
specific tyrosyl residue, 614
formation, 429
inhibition, 430
Flavokinases
in synthesis of riboflavin-5'-phosphate, 429
masking of activity, 429
Flavoprotein pyruvate oxidase
substitute for lipoic acid-linked pathway, 610
Flavoproteins
aldehyde oxidase, 604-5
amino acid oxidase, 599-601
diaphorases, 607-10
dihydroorotic dehydrogenase, 615
glucose oxidase, 605-6
glycollate oxidase, 615
α-hydroxyacid dehydrogenase, 611-14
in biological oxidations, 598-616
kinetics of, 598-99
lactate dehydrogenase, 611-14
lipoyl dehydrogenase, 607-9
NADH cytochrome reductases, 614-15
pyridoxine-5-phosphate oxidase, 616
succinic dehydrogenase, 606-7
xanthine oxidase, 601-4
see specific enzymes
Flourescence emission
in recording of redox changes, 541
Fluorescent dyes
in cell sites of virus biosynthesis, 84
2-Fluoroadenine
inhibition of cell growth by, 475
Fluorocytidine
enzyme inhibition by, 489
Fluorodeoxycytidine kinase
evidence for existence, 490
Fluorodeoxyuridine
as an anti-tumor agent, 160, 485-90
inhibition of DNA synthesis, 90, 486
inhibition of virus multiplication, 487
reversal of action by thymidine, 487
sensitivity to fluorodeoxycytosin in cells resistant to, 490
5-fluorodeoxyuridylate
in inhibition of thymidylate synthesis, 205
Fluoropyrimidines
effect on DNA, RNA, and protein synthesis, 485-90
effect on bacteriophage, 487
effect on microorganisms, 487
enhancement of chemotherapeutic effectiveness by, 488
mechanism of action, 485
see specific compounds
Fluorouracil
analogs of UDP glucose, 488
effect on bacteriophage, 487
effect on microorganisms, 487, 489
genetic resistance to, 490
incorporation in messenger RNA, 18, 486
inhibition of transferase activity, 489
relation of sensitivity to cortisone resistance, 490
replacement of uracil, 18
resistance to in microorganisms, 489
5-Fluorouridine triphosphate
in protein synthesis, 18
Folic acid
analogs, 479
biogenesis, 430-37
deficiency
associated with excretion of formiminoglutamic

acid, 374
associated with excretion of urocanic acid, 374
enzymatic aspects, 185-211
enzymatic reduction of, 186, 479
resistance to
role of reductases, 480
Folic acid reductases
action of, 627
from microorganisms, 628
from thymus, 628
Foot and mouth disease virus of
infectious RNA of, 136
Formaldehyde
condensation reaction with tetrahydrofolate, 189
Formiminoglutamate formino transferase
assay for, 195
Formiminoglycine formino transferase
assay for, 195
Formiminotetrahydrofolate cyclodeaminase
assay for, 196
sources, 196
Formylglutamate formyl transferase
assay for, 195
from hog liver, 195
Formylglycinamide ribonucleotide
accumulation by glutamine analogs, 478
N-10 Formylpteroic acid
from fermentation liquors of Rhizopus nigricans, 431
relation to folic acid, 431
N-10 Formyltetrahydrofolate deacylase
from beef liver, 194
specific assay, 194
N^5 Formyltetrahydrofolate isomerase, see cyclodehydrase
Formyltetrahydrofolate synthetase
from Clostridrium, 193
from human erythrocytes, 193
from Micrococcus aerogenes, 193
mechanism of synthesis, 193
spectrophotometric assay for, 192
Formyltetrahydrofolic acid synthesis, 193
Fourrier synthesis
and myoglobin structure, 269
and side chain bonding, 270
of chymotrypsinogen, 276
Fractionation
calcium phosphate columns, 51
Ecteola-cellulose, 51
histone-kieselguhr, 51
methylated serum albumin-kieselguhr, 51
of DNA, 51, 97
of RNA, 33
paper chromatography, 51
polymer phase systems, 51
starch zone electrophoresis, 51
Fructose
direct conversion from glucose, 336
Fructose diphosphatase
activity toward sedoheptulose diphosphate, 344
L-Fucose
degradation of, 339
Fungichromine
mass spectra of, 775

G

Galactose
incorporation into glycogen, 336
role in galactosemia, 336
Galactose-1-phosphate uridyl transferase
absence in galactosemia, 336
Galactosemia
absence of galactose-1-phosphate uridyl transferase in, 336
β-Galactosidases
stimulation by DNA, 17
Ganglion cells
malic dehydrogenase in, 521
Gangliosides
ability to form complexes, 527
action on clupeine, 526
affinity of lipid soluble quaternary amines for, 527
affinity of nucleohistones, 525
assay for, 232
association with microsomes, 233
beef brain, 516
biosynthetic pathway, 232
extraction and purification, 526
guinea pig cerebral cortex, 233
horse erythrocyte, 230
in lysosomes, 235
loss by acetone extraction, 233
neuraminic acid binding by, 527
species similarities, 526
structure of, 231, 233, 526
in Tay Sachs disease, 526
subcellular association of glycolipids, 527
Gas Chrom
as a support in gas chromatography, 717
Gas chromatography
applications of, 720-46
automated systems for, 742
carrier gases, 717
column technology, 710
oversize columns, 742
conversion to derivatives for separation, 719, 734, 743
identification of unclassified substances, 740
liquid phases
for elimination of acyl groups, 717
for separation of fatty acids, 717
highly polar polyester phases, 716
nonselective, 714
selective, 714-15
supports for, 717
methodology, 709-20
preparative separations, 741
quantification problems, 720
radioactivity detections systems for, 713, 718
separation of acids, 720, 723
alcohols, 724
aldehydes, 725
amines, 727
amino acids, 728
complex mixtures, 737
esters of aliphatic alcohols and acids, 729
hydrocarbons, 731
ketones, 725
phenols, 732
steroids, 733
vitamins, 740
structural studies, 743
study of drugs, 738
study of odiferous materials, 738
study of pesticides, 739
study of wood extractives, 738
temperature programmed, 742
Gascardic acid
mass spectra of, 764
Gaucher's disease
glucocerebrosides in, 230

GDP, see Guanosine diphosphate
Gem substitution
result of, 640
Gene activation
by hormones, 697
General acid-base catalysis
examples, 653-58
in electrophilic substitution reactions, 655
General base catalysis
examples, 654
Genetic control
in polysaccharide antigenicity, 326
Genetic information
transfer from DNA to protein, 463
Genetic recombination
in bacteriophage, 85, 90-91
relation to copychoice hypothesis, 85
without DNA synthesis, 85
Gentiobiosyl groups
in phage DNA, 325
Glia
as auxiliary metabolic units to nerve cells, 523-25
chemistry of, 514
distinctive lipid pattern in, 516
microanalytical analysis of fractions, 519
Glial-neuronal relationship
investigation by chemical analysis, 523-25
probable interdependence of, 524, 525
variable effects of drugs on respective cell types, 524
Globular proteins
apolar bonds in, 284
hydrogen bonds in, 284
Glucagon
in free fatty acid mobilization, 248
α-1,4-Glucan-6-glycosyltransferase
activity on amylopectin β-limit dextrin, 332
Glucocerebrosides
in Gaucher's disease, 730
β-Gluconase
in polysaccharide degradation, 334
D-Gluconate-6-phosphate dehydrogenase
$NADP^+$ specific action of, 629
Gluconic acid
induction of Entner-Doudoroff pathway by, 344
Glucopyranosides
by Koenig-Knorr reaction, 162
Glucosamine
n-acyl derivatives, 171
in preparation of muscarin analogs, 172
incorporation into protein after injection, 337
Glucosamine-6-phosphate
acetylase, 337
deaminase, 337
Glucose
conversion to fructose, 336
oxidation by leukocytes, 343
stimulation of oxidation by insulin, 347
transfer of phosphate to, 335
utilization in biotin deficient rats, 335
Glucose-galactose transferase
role of both UDP and TDP linked sugars in, 337
Glucose oxidase
formation of FAD and FMN holoenzymes with, 605
from microorganisms, 605-6
nicotinamide compound in, 606
ratio of FAD to enzyme, 605
Glucose-6-phosphate
effect on glycogen synthetase, 329
in glycogenesis, 332
Glucose-6-phosphate dehydrogenase
binding to NADP, 627
from erythrocytes, 627
in metabolism of oligodendroglia, 532
in white matter of brain, 532
inhibition by steroids, 686
relation to sensitivity to hemolysis, 343
relative activity of mammalian and yeast on NADP, 686
O-glucosides
of hydroxymethylcytosine, 99
Glucosylation
of hydroxymethylcytosine, 324
UDP-glucose in, 325
β-Glucosylhydroxymethylcytosine
in phage T4 infected cells, 325
Glucuronic acid
enzymes in pathway, 345
epimerization of, 328
in formation of ascorbic acid, 345
Glucuronic acid dehydrogenase
enzyme specificity differences, 357
Glutamic acid
conversion to aspartate, 358
conversion to urea, 357
from proline oxidation, 374
metabolism, 355-59
oxidation of, 358, 589
Glutamic acid decarboxylase
distribution in brain tissue, 521
Glutamic acid dehydrogenase
action of phenyl mercuric acetate on, 357
action of thyroxine on, 356
actions of, 625
aggregation and disaggregation of, 356, 684
dextrorotation, 356
dissociation and increase in binding sites, 356, 625
effect of GDP and GTP on, 357
inhibitors, 356, 684
properties of, 683
steroid control of, 685
Glutamic-alanine transaminase
increase by glucocorticoids, 385
mitochondrial, 386
Glutamic-aspartic transaminase
isozyme of, 385
mechanism of catalysis, 385
Glutamic-pyruvic transaminase
stimulation by corticosteroids, 702
Glutamine
analogs, 476
arsenolysis reaction, 358
as primary amino donor for CTP synthesis, 478
in chemotherapy of cancer, 476-81
metabolism, 358-59
Glutamine synthetase
manganese requirement, 358
mechanism of action, 358
γ-Glutamyl transferase, see glutamine synthetase
Glutathione
reduction of disulfide bonds, 404
Glutathione reductase

catalysis of disulfide bond reduction, 400
coupling with transhydrogenase, 404
in insulin degradation, 404
inhibition by heavy metals, 400
mechanism of action, 615
disulfide enzyme-substrate linkage in, 401
role of TPNH, 401
properties of, 401
Glutathione transhydrogenase
coupling with glutathione reductase, 404
in formation of disulfide bonds, 405
in insulin degradation, 404
substrates for, 403
D-Glyceric dehydrogenase
steriochemical studies, 628
Glyceride ethers
separation by gas chromatography, 736
Glycerides
mass spectra of, 762
D-Glycero-D-mannoheptose
in Chromobacterium violaceum, 321
L-α-Glycerophosphate oxidase
inhibition by thiol reagents, 616
Glyceryl ethers
alkoxy side chain, 224
biosynthesis of, 225
complex nature in brain, 224
distribution and function, 223
in blood element formation, 223
in bone marrow protection against radiation, 223
relation to plasmologens, 226
Glycinamide ribonucleotide transformylase
assay for, 194
Glycine
as a precursor of cellular components, 363
biosynthetic pathways, 361-64
glyoxylate pathway, 361-62
in photosynthesis, 361
in uric acid synthesis, 363
role of phosphorylate, 361
uptake correlated with ATP content in brain, 528
Glycine-serine interconversion, 363
Glycogen
enzymes in formation of, 329-32
metabolic pools in Fasciola hepatica, 332
synthesis of, 329
Glycogen phosphorylase
inhibition by steroids, 687
pyridoxal phosphate dependency, 687
Glycogen synthetase
in skin after Xray, 332
modification by insulin, 348
Glycolipids
cerebrosides, 230
in chloroplasts, 219
in erythrocyte membrane, 219
separation on silicic acid, 233
subcellular association, 527
Glycollate oxidase
dual catalysis of, 615
Glycolysis
effect of azaserine anaerobically, 465
inhibition of, 340
phosphofructokinase in, 340
regulation of, 339-42
reversion of, 341
N-Glycosides
as therapeutic agents, 165-66
synthesis of, 165-69
O-Glycosides
condensation reactions in synthesis, 163
synthesis of, 161-64
Glycosidic bonds
formation of, 321
Glycosyl halides
decomposition in Koenig-Knorr synthesis, 161
Glyoxylate
catabolism by way of malic acid, 362
condensation in aminoadipate formation, 366
conversion from γ-hydroxyglutamate, 376
in synthesis of glycine and serine, 361-62
transamination of, 387
Glyoxylate dehydrogenase
CoASH and $NADP^+$ specificity, 629
Goiter
thiourea in, 411
Granular layer
of cerebellum
enzymes in, 521
Growth hormone
effect on phosphorylase activity, 332
Guanidine
in ribonuclease reformation, 286
Guanine
in folic acid precursors, 436
Guanine-cytosine content
in bacterial DNA species, 47
Guanosine
pathway to pteridine, 436
Guanosine diphosphate
effect on glutamic acid dehydrogenase, 357
Guanosine diphosphate-colitose
transformation from GDP mannose, 325
Guanosine diphosphate-glucose
mammary gland enzyme for, 323
Guanosine diphosphate-D-glycero-D-mannoheptose
in yeast, 321
Guanosine diphosphate-mannose
conversion to GDP-rhamnose, 326
conversion to GDP-talomethylose, 326
in phosphorylated mannan production, 328
in phosphorylysis of pyrophosphate bonds, 324
transformation to GDP-colitose, 325
transformation to GDP-fucose, 339
Guanosine diphosphate-rhamnose
conversion from GDP-mannose, 326
in bacterial polysaccharides, 326
Guanosine diphosphate talomethylose
conversion from GDP-mannose, 326
in bacterial polysaccharides, 326
Guanosine monophosphate
effect of purine analogs on conversion of IMP to, 473
in soluble RNA, 36
Guanosine triphosphate
analogs, 464
effect on glutamic acid dehydrogenase, 357
role in amino acid transfer, 464

H

"H" locus
in phage protein control, 69
mutations, 69
Hadacidin

action on human tumors, 493
competitive inhibition with aspartic acid, 494
inhibition of adenylic acid biosynthesis, 494
Hansenula
phosphorylated mannan of, 328
shingolipids of, 228
tetra-acetyl phytoshingosine VI, 228
tri-acetyl dihydroshingosine VII, 228
Helenine
in virus chemotherapy, 140
Helices
alpha helix in globular proteins, 269
of myoglobin, 271
Hematin
requirement of apotryptophan pyrrolase, 378, 443
Heme group
histidyl residue involvement in, 314
in hemoglobin, 314
in myoglobin, 272
Heme-heme interaction
absence in hemoglobin H (β_{A4}), 315
evidence from sigmoid curve of oxygen dissociation, 314
evidence from Xray data, 315
Hemoglobins
abnormal, 310-16
chains, 305, 309
alpha, 305
amino acid sequence of, 305, 306
beta, 305
gamma, 305
homology between, 308
methods of separation, 305
chromatography, 302, 313
electrophoresis, 313
fingerprinting, 311
function of, 313
heme-heme interaction, 314
absence of, 315
heterogeneity, 301-3
genetic, 301
maturation, 301
minor component, 301
hybridization, 312
linkages, 314
oxygen affinity, 316
solubility, 313
spectrum of, 313
structure, 303-10, 313
Hemophilus parainfluenzae
cytochromes of, 592
Heptulose
from alfalfa leaf, 172
Herpes virus
DNA, 49
identification in vesicular fluid, 127
regression of corneal lesions by IdUR, 493
structure, 127
Herpetomonas oncopelti
diaminopimelate decarboxylase in, 365
intracellular bipolar bodies, 365
lysine pathway, 365
Heterogeneity
of hemoglobin, 301-3
of RNA, 35-36
Heterotransplantation
effect of 6-mercaptopurine on, 469
Hexokinase
in Embden-Meyerhof pathway, 341
in glycogenesis, 332
insulin action on, 341
Hexose monophosphate pathway
in carbohydrate metabolism, 343-44
stimulation in phagocytosis, 343
Hexose-1-phosphate-uridyl transferase
action on an analog substrate, 324
Hippuricase
identity with acylase I, 392
Histidase
in skin of patients with histidinemia, 374
Histidine
elevated excretion in histidinemia, 374
regulation of biosynthesis, 374
Histidinemia
skin histidase activity in, 374
Histidyl residues
in heme to globin linkage, 314
in myoglobin, 272
Histones
complexing of, 73
in regulation of genetic activity, 73
in RNA fractionation, 30
Homogentisic acid oxidase
absence in alcaptonuria, 381
L-Homoserine
activity with NADPH, 365
L-Homoserine dehydrogenases
bacterial, 365
Hyaluronic acid
synthesis in Group A Streptococcus protoplasts, 328
Hyamine
affinity for gangliosides, 527
Hybrid DNA, 52
Hybridization
in study of abnormal hemoglobin chains, 304
Hydrocarbons
separation by gas chromatography, 731-32
Hydrocortisone
effect on tryptophan pyrrolase, 378
effect on tyrosine-glutamic transaminase, 386
Hydrogen bonds
disruption by urea, 287, 416
in DNA stabilization, 57
in folding of globular proteins, 284
in protein-water layers, 283
in water, 534
reinforcement by S-S bonds in peptide chains, 416
Hydrophobic bonds
in collagen hydration, 535
in contractility, 535
in DNA structure, 535
in "iceberg" water, 534
in ionic selectivity, 535
α-Hydroxyacid dehydrogenases
from pig renal cortex, 611
long chain, 612
short chain, 612
3-Hydroxyanthranilic acid oxidase
in nicotinic acid synthesis, 443
Hydroxybenylbenzimidazole
inhibition of entero-virus multiplication, 140
requirement for enterovirus growth, 140
β-Hydroxybutyric dehydrogenase
sources, 629
use in redox potential determinations, 629
17-β-Hydroxydehydrogenases
specificity of, 626
α-Hydroxyglutamate
conversion to glyoxylate and alanine, 376
Hydroxylamine
as a mutagen, 67
in RNA degradation, 34
Hydroxymethylcytosine
DNAs containing, 47

O-glucosides of, 99
properties of, 99
5-Hydroxymethyldeoxy cytidylic acid phosphate
site of reaction with N^5 N^{10} methylenetetrahydrofolate, 192
synthesis, 192
comparison with thymidylate synthesis, 192
Hydroxymethylpyrimidine
in thiamine biosynthesis, 438
Hydroxymethylpyrimidine diphosphate
formation of, 438, 440
in relation to ATP requirement of thiamine phosphate, 438
Hydroxymethylpyrimidine monophosphate
intermediate in formation of diphosphate, 438
Hydroxymethylpyrimidine phosphokinase
in formation of hydroxymethylpyrimidine, 440
p-Hydroxyphenylpyruvic acid oxidase
absence in alcaptonuria, 381
inhibitors, 381
protection by ascorbic acid and coenzyme Q, 381
Hydroxyproline
conversion from proline, 375
incorporation into collagen, 375
inducibility in Pseudomonas striata, 376
20-α-Hydroxysteroid dehydrogenase
from rat ovary, 626
NADP specificity of, 626
5-Hydroxyuracil
replacement of thymine in phage DNA, 49

I

"Icebergs"
in structure of water, 283
negative volume change in formation of, 283
"Iceberg" water
hydrophobic bonds in, 534
in general anesthesia, 533
icosisphingosine
in ox brain mucolipid, 235
L-iditol dehydrogenase
crystalline form, 337
in oxidation of polyols, 337
Iduronic acid
in chondroitin sulfate B, 328
Imidazole
as a catalyst in the decomposition of penicillin, 643
Imidazole monophosphate
inhibition of conversion to GMP by purine analogs, 473
Imidazole propionic acid
from radioactive histidine and urocanic acid, 374
in normal human urine, 374
Imidazole pyruvic acid
elevated excretion in histidinemia, 374
Imipramine, see Tofranil
Immune response
effect of 6-mercaptopurine on, 469
suppression by Actidione, 497
Inclusion compounds
in relation to catalysis, 644
Indole
as electron donor, 538
conversion to tryptophan, 377
Infectious nucleic acid
viral DNA, 85, 115
viral RNA, 85
Infrared spectrum
of carbohydrates, 155
Inositol
effect of deficiency on cell membranes, 327
morphological changes in Neurospora associated with deficiency of, 327
synthesis of, 338
Inositol phospholipids
biosynthetic scheme, 237
chemical structure of, 235
enzymes active on, 238
Insect viruses
changes in nucleic acid with infection by, 128
infectious RNA of polyhedrosis infections, 128
Insulin
biphasic effect of, 347
disulfide linkages in insulin binding, 347
effect on hexokinase activity, 341
enzymatic degradation of, 404
glycogen synthesis in diaphragms of normal and diabetic rats, 347
glycogen synthetase, 330, 347, 348
imitation of effect by -SH reagents, 413
mitochondrial membranes, 413
$NADP/NADPH_2$ turnover, 347
resynthesis from reduced components, 404
stimulation of glucose oxidation by, 347
sugar transport, 569
thiol-disulfide interchange hypothesis in mechanism of action, 413
Interconversion
of sugars, 321
Interferon
in virus chemotherapy, 140
Intermolecular reaction rates
compared with intramolecular reaction rates, 640
Intestinal mucosa
in free fatty acid conversion to triglyceride, 246
Intramolecular reactions
as models for enzymic reactions, 640
Invertase
in hydrolysis of sucrose, 335
Iodide
as an electron donor, 539
smooth muscle contraction with electron acceptor, 539
Iodine number
in relation to temperature and saturation of fatty acids, 262
Iodoacetic acid
imitation of insulin action by, 413
Iododeoxyuridine
competition with kinases converting thymidine to dTTP, 490
in herpes simplex chemotherapy, 140, 493
reactions with DNA polymerase, 490
Iodouracil
competitive anabolism with thymine, 490
incorporation into cellular DNA, 490
site of action, 490
Ion exchange resins
in catalysis, 644
Ionic selectivity
hydrophobic bonds in, 535
Ionization detection systems, 712
Ion movements
in neurochemistry, 525-32
relation of metabolic and electrical phenomena

to, 525
Ionophoresis
in carbohydrate analysis, 157
Ion pair formation
equilibrium constants for, 642
Ion transport
acetylcholine in, 561
biological, 553-72
by macromolecular conformational changes, 563
dependence on ATPase, 528, 559
relation of phospholipoprotein metabolism in, 529, 530
role of "Darmstoff" in, 561
sodium and potassium ions, 556
Isocitrate dehydrogenase
action on NADH, 589
Isolation
of viruses, 87
Isomerases
for pentoses, 339
role of manganese in, 339
Isomorphous derivatives
of chymotrypsinogen, 276
general procedure, 274-78
heme proteins, 275
insulin, 275
β-lactoglobulin, 278
lysozyme, 276
myoglobin, 274
ribonuclease, 276-78
role of complex ions in formation of, 274-75
stoichiometric substitution in crystal lattice to obtain, 274
Isomorphous replacement technique
for determination of phases of observed X-ray reflections, 274
Isoprenoid hydrocarbons
separation by gas chromatography, 731
Isotopes
location in molecules by mass spectra, 776
Isozymes
entities or artifacts, 595, 597
possible differences in enzymes of various cellular fractions, 597

K

Karplus curve
in determination of carbohydrate configuration, 155
Kerato-conjunctivitis
effect of bromodeoxyuridine and fluordeoxyuridine on virus causing, 493
Keto-acids
oxidation of, 607-10
α-ketoisovaleric acid
conversion to pantoic acid in E. coli, 420
precursor for valine, 420
Ketones
separation by gas chromatography, 725-27
Ketopantoate
use by pantoate requiring E. coli mutants, 420
Ketosteroids
as electron donors, 538
Kidney tubules
disulfide hormone action on membranes of, 412
Koenig-Knorr reactions
in preparation of glucopyranosides, 162
Krebs and Bellamy pathway of glutamate oxidation, 358
Kynurenine
catabolism of, 378-80
in microorganisms, 380
conversion to β(8-xanthurenyl)-glucosiduronic acid, 380
transamination of, 380
Kynurenine transaminase
inhibition by steroids, 687
pyridoxal phosphate dependency, 687-88

L

Lactate dehydrogenase
dependence on zinc, 614
in oxidation, 611-14
isozymes, 598
sources, 611
Lactate-ferricyanide reductase
from D-lactic cytochrome reductase in presence of protamine, 597
Lactate oxidizing enzymes
cytochrome b_2, 612
from yeast, 612
Lactic acid
production in cancer tissue, 340
D-Lactic cytochrome reductase
reversible transformation in presence of protamine, 597
sensitivity to source of cytochrome c, 583-84
Lactic dehydrogenase
crystallization from beef heart, 342
dissociation, 627
flourescence spectral shifts, 627
preparation, 627
Lactobacillus
fatty acid synthesis, 257
Lactobacillus arabinosus
asparagine synthetase from, 360
Coenzyme A synthesis, 422
cysteine dependency in, 422
CDP-glycerol enzyme, 323
CDP-ribitol enzyme, 323
lactate dehydrogenase, 611
Lactobacillus bifidus
degradation of dextran, 334
Lactobacillus bulgaricus
natural resistance to azauracil, 482
β-lactoglobulin
isomorphous derivatives, 278
Lactose
lactose-1-phosphate as intermediate, 335
synthesis of, 334-35
UDP-glucose in synthesis, 334
Lagosine
mass spectra of, 773
Leaving group transfer reactions
explanation of, 662
Lecithin
distribution in tissue, 217, 221, 516
from phosphatidyl serine, 221
Leprosy
thiol-related compounds in treatment of, 399
L-Leucine
biosynthesis, 368
catabolism, 369
conversion to fatty acids, 369
intermediate in utilization, 369
Leucine dehydrogenase
in amino acid metabolism, 628
Leucomycin
acid methanolysis, 172
Leuconostoc mesenteroides
lactate dehydrogenase from, 611
Leucocytes
oxidation of glucose by, 343
Linear polyesters
as selective liquid phase for gas chromatography, 715
Linkers
of DNA subunits, 46
Lipase

hydrolysis rate in relation to chain length, 242
in mono and diglyceride analysis, 242
specificity for α position of glycerides, 241
Lipid mobilization factor from human urine, 248
Lipids
absorption, 241-43
brain, 515-16
complex, 215-38
fatty acids
biosynthesis, 252-64
α-glyceryl ethers, 223-26
glycolipids, 230-38
cerebrosides, 230-35
inositol phospholipids, 235-38
mucolipids, 235
mass spectra, 759
metabolism, 241-64
mobilization, 244-52
in fasting, 247
of tissue and diet, 249
phosphoglycerides, 220-23
sphingomyelins, 227-30
sulfolipids, 226-27
transport, 244
Lipoprotein
hexagonal structure, 536
hydrophobic bonds in, 535
in nervous tissue, 535
liquid crystalline phases in permeability, 535-36
London-van der Waals forces in, 537
units
as semiconductors, 537
Lipoyl dehydrogenase
dithiol groups, 399-400
in electron transfer, 400
identity with Straub diaphorase, 579, 607
inhibition by arsenite, 399
isozymes, 598
modification by incubation with copper ion, 596
new "red" intermediate in, 608
polypeptide chains, 400
reaction mechanism, 608-9
reducible disulfide bonds in, 400
TPNH in, 401
ultracentrifugation analysis, 400
Liquid phases
for gas chromatography, 713
Liver
in fatty acid metabolism, 246
London-van der Waals forces
in cohesion and structure of biological systems, 537
Long chain aliphatic acids
mass spectra of, 761
Long chain aliphatic alcohols
mass spectra of, 759
Lumazine
synthetic condensation, 428
Lupus erythematosus
antibody to denatured DNA in sera of, 100
reaction with single stranded DNAs, 100
Luria-Latarjet effect
correlation with DNA synthesis, 104
DNA-RNA complexes in, 104
with pseudorabies virus, 128
D-Lysergic acid dimethylamide
as an electron donor, 538
Lysine
catabolic pathway, 366
degradation in Clostridium, 367
metabolism of, 365
regulation of biosynthesis, 367
ε-Lysine acylase
from Achromobacter, 367
Lysine-glutamic transaminase
in bacteria, 387
Lysogenic bacteria
induction, 118
lysogenic systems, 115
Lysolecithin
acylation, 222
functions, 222
Lysophosphatidyl inositol
acylation of, 222
Lysopine
determination of structure, 768
Lysosomes
gangliosides in, 235
protection of by steroids, 690
Lysozyme
genetic control of production, 101
in phage adsorption, 101
isomorphous derivatives, 276

M

Malic acid
in glyoxylate catabolism, 362
Malic dehydrogenase
in ganglion cells, 521
Malonic semialdehyde
from propionic acid, 421
in β-alanine synthesis, 420
Malonic semialdehyde dehydrogenase
from Pseudomonas, 628
Malonyl coenzyme A
in fatty acid synthesis, 252
Mammary gland
GDP-glucose enzyme in, 323
D-Mannitol dehydrogenase
induction in Nocardia, 338
Mannose
metabolism, 335-36
Manool
mass spectra of, 764
Maple syrup urine disease
allisoleucine accumulation in, 369
Mapping procedures
for oligonucleotides, 33
Marasin
mass spectra of, 775
Mass spectra
amino acids, 765-70
antibiotics, 773-76
bile acids, 762
carbohydrates, 771-72
characteristics of, 757-76
interpretation, 757
lipids, 759-62
nucleosides, 772-73
peptides, 770-71
steroids, 763-65
terpenes, 763
Mass spectrometers
varieties, 755-57
Mass spectrometry
instrumentation, 755-57
limitations, 756
spectra, 757-76
stable isotope location, 776-78
value in analyzing microquantities, 775
Membrane structure
in nervous tissue
complex formation, 527
orientation and function of PLP, phosphatase, and ATPase, 531
Mengo virus
Actinomycin insensitivity, 21
Meractinomycin, see Actinomycin
6-Mercaptopurine
competitive inhibition of xanthine oxidation, 468
effect of alkyl substituents at 9 position, 470
effect on immune and allergic response, 469
effect on transplantation, 469
feedback inhibition effect, 469
inhibition of DPN synthesis, 469
mechanism of action, 469

metabolic pathway, 468
nonspecific binding to nucleic acids, 468
oxidation to thiouric acid, 468
resistance, 470
Mercaptopyruvate
transfer of sulfur from, 407
Mercuric cyanide
as a condensation agent, 164
Messenger RNA
Actinomycin as a tool in study of turnover, 499
DNA template for, 27
ecdysone on, 697
function, 15-19, 50, 86
incorporation of fluorouracil into, 486
in formation of cellular RNA, 16-19
phage induced, 105
protein template, 27
site of azaguanine action, 464
steroid regulation of, 695
Mesylation
in amino sugar preparation, 170
Metabolism
in relation to cancer, 463-502
of amino acids, 355-92, 628
of carbohydrates, 321-48
of lipids, 241-64
of RNA, 15-37
Methionine
analog of cobamide coenzyme in synthesis of, 209-10
donor of methyl bases in soluble RNA, 23
in maple syrup urine disease, 369
methyl group donor in corrin ring of Vitamin B_{12}, 452
methyl group donor to phenoxazinone of Actinomycin, 380
relation to Trigonopsis variabilis morphology, 327
synthesis
de novo, methyl synthesis, 198-99
source of hydrogen in, 199
Methionine sulfoxide
-related reduction of disulfides, 402
L-(-)Methionine sulfoxide
reduction to methionine, 402
Methionine synthetase, see N^5-Methyltetrahydrofolate methyl transferase and N^5-Methyltetrahydropoteroyltriglutamate methyl transferase
5-Methoxyindole-3-acetic acid
mass spectra of, 775
α-D-L-methylaspartate
inhibition of urea cycle by, 373
Methylated nucleotides
in soluble RNA, 23
Methylated serum albumin-kieselguhr
chromatography columns, 30
in separation of DNAs, 51, 97
Methylation
of fatty acids, 258
6-N-Methyldeoxyadenosine
phosphorylation to nucleotides, 476
N^5-Methylenetetrahydrofolate
assay for L-serine hydroxymethyl transferase, 189
direct conversion from cyclodehydrogenase, 196
formation of, 189
intermediate in methionine biogenesis, 211, 431
major constituent of folic acid compounds in serum, 431
molecular extinction coefficient, 189
reaction with glycine to form tetrahydrofolate, 189
role in thymidylate synthetase system, 189
N^5, N^{10}-Methylenetetrahydrofolate cyclohydrolase
hydrolysis, 197
sources, 197
spectrophotometric assay, 197
N^5, N^{10}-Methylenetetrahydrofolate dehydrogenase
function, 197
sources, 197
spectrophotometric assay, 107
stereospecificity, 197
N^5, N^{10}-Methylenetetrahydrofolate reductase
detection of, 198-200
FAD as a substrate, 199
from a methionine-less E. coli mutant, 198
identity with prefolic A oxidase, 198
in de novo methyl synthesis, 199
inhibition, 188
as assay for 4-amino-4-deoxy folates, 188
in methionine synthesis, 199
preparation, 198
reversible complex with aminopterin, 188
Methylfucose
from glycolipid hydrolysis, 172
Methylphenyl siloxane
as a selective liquid phase for gas chromatography, 715
Methylpyrrolidylacetyl salicylate hydrochloride
rapid hydrolysis and reaction with acetate in, 641
Methylrhamnose
from glycolipid hydrolysis, 172
α-Methylserine
in Amicetin, 364
α-Methylserine hydroxymethyl transferase
from Pseudomonas, 191, 364
reactions catalyzed by, 191
N^5-Methyltetrahydrofolate methyl transferase
from mammalian liver, 210
N^5-Methyltetrahydropteroyltriglutamate methyl transferase
assay, 209
in methionine synthesis, 209
Metrazol
relation of action to electron donating properties, 539
Mevalonic acid reductase
from pig liver, 628
utilization of either NADH or NADPH by, 628
Microanalytical analyses
correlation of histology and biochemistry in punched out tissue cylinders, 519
Micrococcal nuclease
in nucleic acid degradation, 34
Micrococcus lysodeikticus
DNA from, 46
fatty acid synthesis in, 258
leucine pathway in, 369
polyribonucleotide enzyme source, 25
Microcrystals
of water
role in anesthesia, 533
Microdissection
techniques for separation of neurons and glia for chemical analysis, 522

Microsomes
phospholipid content, 218
"Minimum deviation" tumors
in modified deletion hypothesis, 502
similarity to tissue of origin, 502
Mitochondria
as transducing systems, 537-41
effect of disulfides and thiols on membranes of, 413
free radicals in heart muscle mitochondria, 537
phospholipids in, 218
succinate oxidation in, 537
swelling after sciatic nerve stimulation, 518
Mitomycin C
anti-tumor activity, 494
depolymerization of cell DNA, 21
effect on
bacteria, 494
DNA in vitro, 495
polymerases, 21
viruses, 86, 496
genetic nature of coliphage produced in presence of, 496
giant cell production in tissue culture by, 495
impairment of transforming activity in bacteria, 496
radiomimetic effect, 496
resistant tumors
cross resistance to nitrogen mustards, 497
RNA inhibition, 21
site of action, 496
specific breakdown effect on DNA, 394-95
structure of, 494
Molecular autoradiography
of phage DNA, 98
Molecular layer
of cerebellum
study of enzyme activity in, 521
Molecular weights
measurement by equilibrium ultracentrifugation, 292
of viruses, 89
Monoenoic acids
aerobic mechanism of formation, 259
anaerobic mechanism of formation, 260
Monoglycerides
absorption of, 243
formation of diglycerides, 243
phosphorylation in brain, 222
Monosaccharides
and related substances, 335-39
Mucolipids
icosisphingosine in, 235
in ox brain, 235
Mucopeptides
inhibition of synthesis by penicillin, 326
Mucopeptide-teichoic acid
from S. aureus, 325
Mucopolysaccharides
enzymes in synthesis of, 328
impairment of synthesis in colon homogenates, 328
relation of cartilage-inducing substance from embryonic spinal cord, 328
role of 3'phosphoadenosine-5'-phosphosulfate in, 328
Multiple myeloma
tryptophan catabolism in, 380
Multiplicity reactivation
and marker rescue, 91
inactivation of phage for, 91
Multivalent repression
in control of branched chain amino acid pathways, 370
Mung bean
nuclease in RNA degradation, 35
TDP-galactose enzyme activity in, 323
UDP-glucose-UDP-galactose interconversion in, 337
Muraminidases
characteristics of, 101
Muscle
glycogen synthetase in, 329
phospholipid content, 217
Mushrooms
tyrosinases in, 382
Mutagenesis
agents inducing, 67-69, 92, 103
mechanism of, 73, 92
virus, 92-95
Mutagens
DNA, 67-69
mechanism of action, 73, 93
see specific agents
Mutational heterozygosis
in phage treated with ethylmethan sulfonate, 93
production of mixed clones, 93
Mutations
at "h" locus, 69
at "o" locus, 68
back mutations, 69
effect of alkylating agents, 68
in DNA molecules, 67-69
mechanisms, 67, 73, 92
reversion of, 67
virus, 92-95
Mycarose
from leucomycin, 172
Mycinose
from chalcomycin, 172
Mycobacterium avium
fatty acid synthesis in, 257
Mycobacterium phlei
formation of oleic acid, 260
Mycobacterium smegmatis
phages for, 115
Mycobacterium tuberculosis
NADH linked nitrate reductase in, 594
nicotinic acid biosynthesis in, 444
thiol compounds in treatment of, 399
Myoglobin
amino acid sequence, 307
crystalline states, 278-79
dilute solution states, 278-79
general features, 269-74
helices, 271
heme group, 272
histidyl residues, 272
isomorphous derivatives, 274
polar interactions, 273
sources, 278
surface polar groups, 272
X-ray diffraction studies, 269-70, 307-8
Myxoviruses
purification and analysis, 137-39

N

"Nearest neighbor"
frequency measurements, 53
sequence studies, 52
Negative feedback
effect of thiouracil, 485
in enzymes of de novo pyrimidine biosynthesis, 483
Neisseria meningitidis
CMP-sialic acid active enzyme in, 323
Neopentyl glycol succinate
use in steroid separation in gas chromatography, 716
Neosomes
of ribosomal RNA, 21

Nerve impulse
source of energy for, 540
concentration gradient of sodium and potassium, 540
temperature effect, 540
Nervous system
correlation of histology and biochemical function
use of punched out tissue cylinders, 519
microanalytical approach to study of, 519
new tools for study of, 541
Nervous tissue
analysis of subcellular structures, 517-18
enzyme determinations, 517
gross chemical composition, 514
lipid-protein-water relationships, 535
separation of constituents, 516
servomechanisms in, 515-16
undefined molecules in, 515
Neuraminic acid
binding in gangliosides, 527
in ganglioside fractionation, 233
Neurochemistry
analytical problems, 513
approaches, 513-46
classical, 533
areas
tabular guide, 543-45
gangliosides, 526-27
ions, 526, 527-32, 537
nucleic acids, 516
slices, 525-26
water, 533-37
Neurons
alteration
by environment, 518
role of mRNA or template RNA in, 519
changes in protein and RNA during morphogenesis, 517
chemistry of, 514-19
distinctive lipid pattern in, 516
microanalytical analysis of fractions, 519-25
morphology and development of specificity, 518
relation of biochemistry to function, 517
Neurospora
conversion of citrulline to arginine, 372
effect of fluorouracil, 487
glucose polymers in, 327
glutamic acid dehydrogenase of, 357
glycogen synthetase in, 329
leucine biosynthesis in, 368
lipid pathway, 221
morphological changes associated with inositol deficiency in, 327
mutants lacking D-amino oxidase, 391
nicotinic acid biosynthesis in, 443
nitrate reduction in, 594
ornithine transcarbamylase in, 371
thiamine biosynthesis in, 440
tryptophan synthetase of, 377
tyrosinases in, 382
Niacin
biosynthesis in plants, 444
tryptophan biosynthetic pathway, 444
Nicotinamide adenine dinucleotide
as an epimerase coenzyme, 328
biosynthesis from nicotinic acid, 445-46
dependence of slime mold glutamic acid dehydrogenase on, 357
in oxidation of polyols, 337
mitochondrial content of Ehrlich ascites tumor, 590
nicotinic acid mononucleotide pyrophosphorylase as a governor in concentration of, 447
pathway of synthesis, 445-47
reduced form
dehydrogenases active in oxidation of, 579-81
dubious role of cytochrome c oxidase, 580
in dissociation of glutamic dehydrogenase, 683
inhibitors in commercial preparations, 622
in oxidation of ethanol, 591-92
linked to succinate oxidation, 588-90
oxidation of, 579
see NADH-
reduction, 588-89
NADH-coenzyme Q reductase
isolation of, 581
NADH cytochrome-b_5 reductase
ratio of flavin to enzyme, 614
reaction mechanism, 615
quantitative removal and recovery of activity with FAD, 614
NADH cytochrome-c reductase
inhibition by steroid hormones, 677
isozymes, 598
NADH-diaphorase
from erythrocytes, 610
from Pasteurella, 610-11
NADH-ferricyanide reductase
modification by ethanol, 596
similarity of modified enzyme to NADH cytochrome-c reductase, 596
NADH oxidase
estrogen induced, 683
Nicotinamide-adenine dinucleotide kinase
in conversion of nicotinic acid to NADP, 447
Nicotinamide-adenine dinucleotide synthetase
in conversion of nicotinic acid to NADP, 447
Nicotinamide deamidase
inhibition by NAD and NADP, 447
sources, 447
Nicotinamide nucleotide dehydrogenase
kinetics, 619-29
Nicotine
intermediate in nicotinic acid biosynthesis, 444
structure of, 445
Nicotinic acid
biosynthesis, 443-47
in animals, 443
in bacteria and higher plants, 444-45
cinchomeronic acid as a precursor, 445
conversion to NADP, 447
in NAD biosynthesis, 445
niacin as a precursor, 444
pathway from tryptophan, 443
quinolinic acid as an intermediate, 443
structure of, 445
Nicotinic acid-adenine dinucleotide pyrophosphorylase
in conversion of nicotinic acid to NADP, 447
Nicotinic acid mononucleotide pyrophosphorylase
as governor in intracellular concentrations of NAD and NADP, 447
in conversion of nicotinic

acid to NADP, 447
Nitrate reductases
in microorganisms, 594-95
Nitrate reduction
coupled to phosphorylation in anaerobiosis, 594
in microorganisms, 594
types of, 594-95
Nitrite reductase
connection with cytochrome oxidase, 595
Nitrogen mustards
as mutagens, 67-68
mechanism of action in phage, 93-94
Nitromethane
catalytic condensation with piperonal, 648
o-Nitrophenyloxalate anion
reaction with 2-amino-pyridium cation, 643
Nitrous acid
as a mutagen, 67-68
mechanism of mutagenesis, 94
Nocardia corallina
adoptive dehydrogenase induction, 338
Nocardia lurida
leucine synthesis, 368
"No longer" viruses
dual nucleic acid content of, 122
kappa factor, 122
Noradrenalin
from labelled dopamine, 384
Norepinephrine
L-form from dopamine hydroxylation, 383
methylation to epinephrine, 384
release of free fatty acids, 248
Novobiocin
acid methanolysis products, 172
Nuclear membranes
in production of virus components, 127
Nucleic acid studies
density gradient analyses, 292
in neuro chemistry, 516
see DNA and RNA
Nucleohistones
complexes with gangliosides, 525
Nucleophilic catalysis
at acyl level of oxidation, 646
factors influencing, 647
of atoms other than carbon, 651
of carbonyl group reactions, 648
phosphoryl enzymes in, 648
Schiff base formation, 648-50
steps in, 645-53
Nucleoside diphosphosugars
metabolism of, 321-25
Nucleosides
as anti-cancer agents, 166
mass spectra of, 772
moiety of Vitamin B_{12}, 452
Nucleosidetriphosphate
firefly luminescence detection method, 96
Nucleotides
enzymatically interconvertible, 322
hexoseamine containing, 323
methylated in sRNA, 23
sequence determination, 33, 52-54
sequences in soluble RNA, 35-37
sequence of minor nucleotides, 36
sugar linked, 321-24
terminal trinucleotide sequence
heterogeneity of adjacent sequence in sRNA, 35-36
Nucleotide sequence
in DNA, 52-54
in sRNA, 35-36

O

O-antigens
modification of in Salmonella, 326
phage conversion of, 116
"O" locus
mutation at, 68
resistance to osmotic shock, 68
Octitol
isolated from avocade, 172
Octulose
isolation, 172
Oligodendroglia
as auxiliary metabolic units to nerve cells, 525
Oligonucleotides
mapping procedures, 33
Oospora lactis
polyol oxidation in, 338
Optical rotation
in protein structure analysis, 293-95
of carbohydrates, 158
Orientation
of molecules by enzymes, 640
Ornithine
acetylation by acetylphosphate, 371
biosynthesis, 371-73
conversion to citrulline and arginine, 372
cycle in Otala lactea, 373
Ornithine trancarbamylase
characterization, 371
Orotic acid
metabolism, 481-83
effect of azauridine on, 481
Osmotic resistance
role of "o" locus in phage, 96
Otala lactea
ornithine cycle in, 373
Oubain
dubious specificity of effect on phosphoprotein labelling, 566
effect on incorporation of P^{32} into phosphatidic acid, 564
inhibition of
ATPase activity in neuronal cells, 528
ion transport, 564
lack of effect on specific activity of ATP, 566
phospholipoprotein turnover in liver, 530
sodium-potassium dependent ATPase, 559
Oxidases
control by steroid hormones, 683
α-Oxidation
of brain fatty acids, 251
Oxidation-reduction systems
in macromolecules, 537
Oxidations
biological, 579-629
estrogen mediated, 682-83
catalyzed by peroxidases, 682
catalyzed by phenolases, 682
inhibition by steroid hormones, 677-79
of carbohydrates, 158
by bromine, 159
by hypochlorite, 159
by manganese dioxide, 159
by periodate, 158
by permanganate, 159
of fatty acids, 250-51
in brain, 251
in peripheral tissue, 251
of succinate, 579
Oxidative phosphorylation
inhibition by steroids, 679
Oxybiotin
use by bacteria in lieu of biotin, 456
Oxygen affinity

of abnormal human hemoglobins, 316
Oxytocin
effect on mitochondrial membranes, 413

P

P^{32} orthophosphate
uptake into glyceryl ether lipids, 225
Pantoic acid
biosynthetic pathway for, 419-20
relation to valine, 420
Pantothenic acid
biogenesis, 421-25
formation from pantoic acid and β-alanine, 421
formation of coenzyme A from, 422
growth factor replacement for, 420
phosphorylation in presence of ATP, 422
Pantothenic acid kinase
substrates for, 422
Paper chromatography
in DNA fractionation, 51
"Papova" viruses
DNA of, 43, 129
Paratose
in S. paratyphi, 325
possible CDP intermediate in biosynthesis of, 325
Parkinson's disease
abnormal RNA levels in nerve cells, 524
Pasteur effect
aspects of, 340
Pasteurella tularensis
NADH dehydrogenases from, 610
Pediococcus cerevisiae
in detection of tetrahydrofolate, 200
Penicillamine
inhibition of decarboxylase, 390
Penicillin
action on CDP-ribitol, 326
effect on cell wall synthesis, 326
inhibition of mucopeptide synthesis, 326
Penicillium frequentans
as source of hadacidin, 493-94
Penicillium notatum
synthesis of D-araboascorbic acid in, 345
Pentamethylene tetrazole, see Metrazol
Pentose phosphate pathway
in artery and vein walls, 343
in microorganisms, 343
in tomato, 343
Pentoses
adaptive isomerases for, 339
fermentation by Brevibacterium pentoso-aminoacidicum, 339
role of manganese, 339
synthesis of, 339
Peptidase
determinations in brain cortex, 519
Peptide chains
reinforcement of hydrogen bonds by disulfide bonds in, 416
Peptides
determination of amino acid sequence by mass spectroscopy, 770-71
Permease
in inducible sugar transport systems, 571
Peroxidases
estrogen induced, 683
in catalysis of estrogen mediated oxidations, 682-83
mechanism of action, 683
in formation of disulfide bonds, 406
Persulfides
as intermediates in sulfur transfer, 408
reactions of, 408
Pesticides
use of gas chromatography in study of, 739
pH
rate profile in reaction of hydrolamine with a ketone, 667
explanation of reaction, 666
role in interpretation of pK_a, 668
"Phage associated lysin"
in phage lysates of streptococci, 102
Phage conversion
of O-antigens, 116
Phagocytosis
stimulation of hexosemonophosphate shunt in, 343
Phaseolus aureus
as a source of UDP-galacturonic acid, 321
Phenethyl alcohol
inhibitor of DNA synthesis, 107
Phenol
extraction method for DNA, 44
interference with ribonuclease reformation, 286
separation by gas chromatography, 733
Phenolases
in catalysis of estrogen mediated oxidations, 682
site of action, 682
Phenotypic reversion
of induced Neurospora mutants in presence of azaguanine, 464
Phenylacetaldehyde
formation from phenylalanine, 381
Phenylalanine
hydroxylation in liver, 380
metabolism, 381
phenylacetaldehyde from, 381
sepia pteridine in hydroxylation, 381
Phenylalanine ethyl ester
mass spectra of, 776
Phenylethanolamine-N-methyl transferase
in methylation of derivatives of phenylethanolamine, 384
in methylation of norepinephrine to epinephrine, 384
Phenylmercuric acetate
action on glutamic acid dehydrogenase, 357
Phosphatides
form of, 219
in ion transport, 561-65
Phosphatidic acid
and ion transport, 562-65
as a component of "pump-ATPase," 564
as a sodium ion carrier in nervous tissue, 531, 563
beef brain content, 516
comparison of transport activity with ATPase activity, 531
cycle in avian salt gland, 562
response to acetylcholine, 562
effect of ouabain in incorporation of P^{32}, 564
evidence for alternate pathways of synthesis, 221
postulated transducer component between ATP and sodium carrier, 562
Phosphatidic acid phosphatase
relation to "pump-ATPase," 563
role in ion transport, 563
Phosphatidyl ethanolamine
beef brain content, 516
Phosphatidyl inositol

beef brain content, 516
Phosphatidyl serine
beef brain content, 516
conversion from L-serine-U-C^{14}, 364
in ion transport, 561
Phosphatidyl serine decarboxylase
separation of, 364
3'-Phosphoadenosine-5'-phosphosulfate
impairment of amino polysaccharide synthesis, 328
incorporation by amino sugars, 328
Phosphocellulose
acetylated for fractionation columns, 31
Phosphodiesterase
from spleen
in RNA degradation, 34-36
from venom
in RNA degradation, 37
Phosphodiester bonds
in RNA, 33
Phosphofructokinase
complex mechanism of activation, 330
role in regulation of glycolysis, 340
stimulation by serotonin, 340
Phosphoglucomutase
and galactose negativity in Saccharomyces, 337
6-Phosphogluconate dehydrogenase
crystalline form from C. utilus, 344
6-Phosphogluconolactonase
separation of, 344
Phosphoglycerate kinase
from rabbit muscle, 342
Phosphoglycerides
biogenesis of, 220-23
Phosphokinase
protein
activity with phosphoprotein phosphatase in cyclic phosphorylation in brain, 565
role in ion transport, 566
Phospholipid
composition of various tissue, 215-20
content of mitochondria, 218
IV from egg yolk, 224
from serine phosphatides, 364
in biological membranes, 215
in ion transport, 561-62
in plant tissues, 219
microsomal content, 218
pathways of synthesis, 220-23
Phospholipoprotein
metabolism in relation to ion transport, 529-30, 565-67
inhibition by ouabain and promethazine, 530
orientation on biological membranes, 531
precursors, 530
Phosphomonoesters
condensation with 2-cyanoethylphosphate, 173
synthesis of, 173
Phosphoprotein
incorporation of P^{32} into, 566
depression by sodium ion absence, 566
in ion transport, 565-67
inhibition by ouabain, 566
method of measurement, 566
Phosphoprotein phosphatase
activity with protein phosphokinase in cycle phosphorylation in brain, 565
role in ion transport, 566
Phosphoprotein turnover
incorporation of P^{32} after electric pulse, 565
location in brain, 566
role in ion transport, 565-67
Phosphorolysis
of pyrophosphate bond in yeast, 324
Phosphoryl enzymes
intermediates in normal catalysis pathways, 648
Phosphorylase
AMP as an activator, 331
adenyl cyclase in b to a conversion, 331
comparison of human and rabbit, 331
competitive inhibition by UDP-glucose, 331
complex mechanism of activation, 330
conversion to a form, 331
conversion to b form, 331
crystallization method, 331
decrease in pyridoxine deficient rats, 332
decrease in Vitamin B_6 deficient rats, 332
effect of epinephrine, 331
increased activity with hormones in brain slices, 332
in leucocytes, 332
in skin of dogs after X ray, 332
levels in resting and stimulated frog muscle, 331
pyridoxal phosphate as coenzyme for, 332
Phosphorylase kinase
role in phosphorylase a level, 331
role of calcium ion, 331
role of cyclic-3',5'-adenylic acid, 331
Phosphorylation
action of volutin, 336
of glucose, 335
photophosphorylation, 415
relation to nitrate reduction anaerobically, 594-95
Phosphorylcholine
in lipid oxidation, 248
Photodimerization
effective wavelength, 71
of bromouracil, 71
reversal of, 71
Photophosphorylation
effect of mercaptans on, 415
inhibition by DTNB in chromatophores, 415
-SH, S-S interchange in, 415
uncoupling mechanism, 415
Photoreactivation
effective wavelength, 71
mechanism of repair, 71
of strand-strand DNA cross links, 91
Photosynthesis
aspects, 346-48
enzymes in reductive pentose cycle in, 346
role of disulfide bonding, 415
role of ferredoxin in electron transfer, 619
unstable intermediates in, 346
Photosynthetic bacteria
disulfide bonds in chromatophores of, 415
Photosynthetic pyridine nucleotide reductase
function in chloroplasts, 618-19
Physical methods
in protein structure, 292
density gradient analysis, 292
equilibrium ultracentrifugation, 292
moving boundary electrophoresis, 293
optical rotation studies, 293
Pimelic acid
relation to biotin, 455
Pinocytosis
role in membrane trans-

port, 555
Pipecolic acid
as an intermediate of lysine catabolism, 366
Piperonal
catalyzed condensation with nitromethane, 648
Pircularia oryzae
glutamic acid dehydrogenase from, 358
lactate dehydrogenase from, 611
xylanase from, 334
Pitressin
diuretic function in relation to -SH groups, 412
Pituitary fraction H
in free fatty acid mobilization, 248
pK_a values
apparent determination, 663-64
factors influencing, 665
significance in pH rate studies, 663
Placental transhydrogenase
stimulation by steroids, 680
Plant viruses
infectious RNA, 119
molecular weights, 121
satellite virus of TMV, 121
see specific viruses
Plasma
phospholipids in, 217
Plasmalogens
in human red cells, 219
relation to glyceryl ethers, 226
Pneumococcus
capsular polysaccharides, 327
endodepolymerase for capsular polysaccharides, 327
UDP-rhamnose in polysaccharides of, 326
Polarography
of carbohydrates, 158
Polio virus
adsorption, 134
chemical inactivation, 133
critical temperature ranges, 135
effect of Actinomycin D on, 21
effect of fluorodeoxyuridine on, 487
infectivity of, 134
inhibitors, 133
messenger RNA of, 135
mutagenesis of, 133
pinocytosis in cell entry, 134
purification of, 133
Poly A
enzyme catalyzing formation of, 25-26
Polyamines
in viruses, 85, 97, 120
Poly-cytidylic acid
in RNA nucleotide sequence, 35
Polyenoic acids
formation of, 261
Polyglycerophosphatides
beef brain content, 516
Polymerase reaction
of RNA, 16-17, 27
ribosomal RNA, 17
soluble RNA, 17
protein synthesis, 17
Polymer phase systems
in partition of DNA, 51
Polymers
reactions with small molecules, 643
soluble
in catalysis, 643
terminal units as primers, 644
Polymorphism
in lipoproteins
relation to permeability changes in membranes, 536
Polynucleotides
as primers, 26
Polynucleotide sequence studies
in TMV RNA, 120
Polyol dehydrogenases
from various sources, 629
in yeast, 338
Polyols
oxidation of, 337-38
Polyoma virus
effect of fluorodeoxyuridine on, 487
infectious DNA, 43
purification of, 130
Polyporus circinatus
enzyme assay system for galactosides, 230
Polyribonucleotides
formation of, 25-26
hybrid complexes with denatured DNA, 50
Polysaccharides
as cell wall components, 325
capsular, 327
composition, 325-33
degradation of, 333-34
α-amylases in, 333
yeast isoamylase in, 334
extracellular, 327
in nervous tissue, 516
metabolism, 325-42
of Streptomyces griseus, 326
Polythymidylate-cellulose
in RNA fractionation, 30
Polyvinyl pyrrolidone
absence of hydrogen bonding in, 288
action of urea on, 288
binding of small molecules to, 644
Porphyra perforata
nucleotides of, 327
Potassium
concentration in sheep erythrocytes, 572
relation to recessive gene, 572
role of Na^+-K^+ pump on concentration, 572
Potassium transport
ATP:ADP ratio in, 556
ATP as energy source for, 557
coupled with sodium transport, 556
dependence on metabolism, 557-58
example of transport unaccompanied to sodium, 557
marker on chromosome in E. coli, 572
Pox virus
DNA, 49
Prefolic A oxidase
detection of, 198-200
identity with N^5,N^{10}-methylenetetrahydrofolate reductase, 198
preparation of, 198
Preparative separation
by gas chromatography, 741
Primer requirement
for polynucleotides, 26
Progesterone
activation of latent ATPase, 679
inhibition of oxidative phosphorylation, 679
Progressive reading
of phage genome, 106
Proline
conversion to hydroxyproline, 375
metabolism, 374-76
oxidation of, 374
role of NAD in oxidation to glutamic acid, 374
Promethazine
inhibition of phospholipoprotein turnover in liver, 530
Propionic acid
as fatty acid precursor, 253
use of mass spectra in analyzing labels of, 777
Propionobacterium
kinase for erythritol phosphorylase in, 338
Prostaglandin E_1

mass spectra of, 776
Prosthetic groups
in oxidizing enzymes
disulfides, 617
flavoproteins, 598-616
see specific compounds
Protamine
effect on electrical excitability of nerve tissue, 526
effect on phosphocreatine, 526
in loss and recovery of potassium ions, 526
role in enzymic transformation of D-lactic cytochrome reductase, 597
Protein-bound sulfur
as a product of thiourea metabolism, 411
Protein disulfide reductase
nonspecificity of activity, 405
Proteins
amino acid sequences in, 288-90
bifunctional reagents in analysis, 290-92
in nervous tissue, 516
physical methods, 292-95
sequences of, 288-95
structure of, 269-95
X-ray diffraction studies, 269
Protein synthesis
and RNA polymerase reaction, 17
effect of steroids on, 689-90, 702
inhibition by azaguanine, 464-68
viral
early proteins, 108-12
relation to DNA synthesis, 103-8
Proteus morganii
cysteine requirement for coenzyme A synthesis from pantothenate in, 422
Proton magnetic resonance spectra
of carbohydrates, 155-57, 175
Proton transfer
and catalysis in ice, 643
Protoplasts
as a biological membrane model in transport of galactosides, 554
infection by T-odd phages, 113
of yeast in sucrose utilization, 335
virus formation in, 43
Pseudomonas
cytochrome oxidase of, 592
enzyme active on TDP-glucosamine in, 323
inducible citrate transport system in, 570
α-methylserine hydroxymethyltransferase from, 191
nitrate reductase in, 594
transaminase in, 450
Pseudorabies virus
base composition of, 127
DNA, 49
inhibition of infectivity by fluorodeoxyuridine, 487
intranuclear inclusions, 127
Luria-Latarjet effect, 128
similarity to herpes, 127
Psicofuramine
anti-tumor activity of, 473
inhibition of GMP synthesis by, 473
inhibition of xanthylic acid amination by, 473
Psitticosis-lymphogranuloma venereum viruses
enzymic content, 122
nucleic acid content, 122
Pteridine compounds
biogenesis, 435-37
conversion from purines, 435, 481
derivatives used as dehydrofolate reductase substrates, 187
importance of position 6 for reductase attachment, 187
enzymic incorporation of C^{14}-5-phosphoribosyl-1-phosphate into, 437
moiety of folic acid, 481
precursor in folic acid synthesis, 431
ATP requirement, 432
Pteroylglutamic acid, see folic acid
Pteroylheptaglutamic acid
isolation from yeast, 431
"Pump ATPase"
in sodium-potassium transport, 559-60
relation to phosphatidic acid phosphatidic acid phosphatase in erythrocyte membrane, 563
Purine
analogs, 464-76
resistance to, 482
similarity to azauracil resistance, 482
conversion to pteridines, 435
glycine and serine as precursor, 363
Puromycin
action on reticulocytes, 500
anti-tumor activity, 499-500
effect on messenger RNA, 697
inhibition of stimulation by hydrocortisone of tyrosine-glutamic transaminase, 386
inhibition of tryptophan pyrrolase by, 378
mechanism of action, 500
possible inhibition of estrogen control of messenger RNA, 697
similarity of structure to end of "transfer" RNA, 499
site of action, 499
specific inhibitor of protein synthesis, 499-500
Pushed out tissue cylinders
in microanalytical analyses of nerve cells, 519
Pyrazine ring
asymmetric 6-carbon in stereospecificity in catalysis, 185
Pyridine nucleotide reductase
photosynthetic, 618-19
Pyridine nucleotides
-linked dehydrogenases, 629
regulation of biosynthesis, 447
Pyridine nucleotide transhydrogenases
placental transhydrogenase, 680
sources, 680-82
stimulation by steroids, 680
Pyridoxal
biosynthesis, 448
-catalyzed reaction, 649, 687
in Vitamin B_6, 447
structure of, 447
Pyridoxal phosphate
as coenzyme in aspartic decarboxylase, 420
as coenzyme in phosphorylase, 332
biosynthesis, 448
enzyme-bound, 190
formation by pyridoxine phosphate oxidase, 449
formation by Schiff bases with amino acids, 388
inhibition of linked enzymes by cycloserine, 388
inhibition of pyridoxine phosphate oxidase, 449
in transamination, 385
in Vitamin B_6, 447
-metal chelates in biological oxidations, 617-18

role in L-serine hydroxymethyl transferase, 190
structure of, 448
Pyridoxamine
biosynthesis, 448
in Vitamin B_6, 447
structure of, 448
Pyridoxamine phosphate
biosynthesis, 448
in Vitamin B_6, 447
oxidation by pyridoxine phosphate oxidase, 449
structure, 448
Pyridoxamine transaminases
as apoenzymes, 388
Pyridoxine
biosynthesis, 448
in fatty acid elongation, 255
in Vitamine B_6, 447
structure, 448
Pyridoxine oxidase
in liver, 450
in yeast, 450
Pyridoxine phosphate
oxidation by pyridoxine phosphate oxidase, 449
Pyridoxine phosphate oxidase
from rabbit liver, 616
oxidations by, 449
purification of, 616
Pyrimidine
alternate pathways for synthesis, 442
analogs, 481-93
resistance to, 483
biogenesis, 442
carbamyl phosphate as precursor, 371
dimerization by ultraviolet light, 91
moiety of thiamine, 438
nonspecificity of anabolic enzymes, 483
sequence analysis after bromouracil treatment, 491
"Pyrimidine-incomplete thiazole"
in Neurospora mutants, 440
"Pyrimidine starvation"
and increase of aspartic transcarbamylase in tumor cells, 483
due to azauridine inhibition, 483
Pyrophosphorylase reaction
in E. coli, 324
Δ^2 pyrroline-5-carboxylic acid dehydrogenase
role in amino acid metabolism, 628
Δ^2 pyrroline-5-carboxylic acid reductase
in proline metabolism, 374
Pyruvate kinase
inhibition by steroids, 686

Q

QF-1
as a selective liquid phase in gas chromatography, 715
Quaternary ammonium compounds
in RNase cleavage, 34
Quinolinic acid
intermediate in nicotinic acid synthesis, 443

R

r-11 genetic locus
relation to messenger RNA, 31
Radiation sensitivity
of analog DNA, 70-71, 492
Radioactivity
measurement in gas chromatography, 713, 718
Radiobiology
of phage, 91
of strand-strand cross links in DNA, 91
Radiofrequency
detector, 712
Rate accelerations
due to internal general acid catalysis, 641
in polymers containing carboxylate, 641
RC locus
in DNA synthesis, 25
in RNA synthesis, 24
Reaction rate constant
increase in presence of a catalyst, 640
Redox pump
as possible mechanism for uphill sodium transport, 558
effect of cyanide on, 559
role of cytochrome chain, 558
role of oxygen consumption in, 558
Reductase
for aromatic nitro compounds, 595
in relation to resistance to anti-folics, 479-80
see specific reductases
Reductoisomerase
in valine and isoleucine biosynthesis, 368
Regeneration
changes in nerve cell constituents, 523
Relaxed strains
and RNA synthesis, 24
Renaturation
as an intermolecular process, 62
conditions affecting, 55
formation of hybrid DNA molecules, 62
of DNA, 52, 62
properties of the reaction, 62-63
Reo viruses
distinguished from ECHO, 136
Replication
of phage DNA
"conservative," 63
mechanism, 63-65
study by "nearest neighbor" sequence frequencies, 65
of RNA, 15-28
Resonance
pmr spectra, 155-57, 171, 175
Respiration
relation to sodium-potassium transport, 557
Respiratory chain
in biological oxidations, 579-95
Reversibility
of DNA denaturation, 60
L-rhamnose
degradation of, 339
in bacterial and fungal polysaccharides, 326
Rhizopterin, see N-10 formylpteroic acid
Rhodanese reaction
in interconversion of thiosulfate and thiocyanate, 409
mechanism, 410
Rhodopseudomonas spheroides
fatty acid formation in, 260-61
utilization of glycine by, 362
Rhodospirillum rubrum
chromatophores of, 415
cytochromes of, 592
Ribityl group
origin of in riboflavin, 429
Riboflavin
biogenesis, 425-30
conversion from compound G, 427
formation in plants, 426
related compounds from microorganisms, 425
Riboflavin-5'-phosphate
formation of FAD from, 429
D-ribofuranosyl bromide triacetate
preparation, 161
Ribonuclease
amino acid sequence studies, 289
heavy atom derivatives, 277

isomorphous derivatives, 276
reformation from reduced protein, 286
interference with reformation, 286
reformation of disulfide bonds, 405
Ribonucleic acid
abnormal levels in nerve cells in Parkinson's disease, 524
accumulation after treatment with 8-azaguanine, 464
amino acid control of synthesis, 24
bacteriophage, 114
biosynthesis, 15-28
inhibition, 19, 73, 498
role of DNA, 24-25, 50, 73
cellular complexes with DNA, 15
coding properties, 24
complementary, 49-51
degradation of, 15, 28-37, 85, 105
methods, 33-35
effect of ecdysone on synthesis, 697
fractionation of, 28
isolation of molecular species, 28
leucine acceptor, 24
messenger, 15-19, 27, 50, 105, 464, 499
ecdysone on, 697
phage induced, 105
steroid control, 695
see Messenger RNA
methylated nucleotides in, 23
microspectrophotometric method for determination in nerve cells, 522
phage control of synthesis, 24
phage induced, 105-6
polymerase reaction, 16-17
proportionality between content and nerve cell body surface, 523
ribosomal, 15-21, 50, 85
complementarity to homologous DNA segments, 27
precursor fractions, 21
16 S, 30
23 S, 30
specific degradation by ribosomal polynucleotide phosphorylase, 85
role in environmental alteration of nerve cells, 519
selective effect of Actinomycin on synthesis, 498
self-replication, 25
soluble, 22-30, see soluble RNA
steroid control, 695-98
"template," 50
"transfer," 50
tumor viruses, 130
variation in base composition, 18
viral
degradation of, 37
synthesis in viral replication, 103-6
Ribosomal polynucleotide phosphorylase
degradation of RNA specifically on the ribosome, 85
Ribosomal system
cell free
effect of chloramphenicol, 499
effect of puromycin, 499
for amino acid incorporation, 499
Ribosomes
self replication, 26
sensitivity to ultraviolet light, 26
Ribosyl derivatives
in vaccinia virus chemotherapy, 140
5-Ribosyluracildiphosphate glucose
action of hexose-1-phosphate uridyl transferase on, 324
action of UDP-glucose dehydrogenase on, 324
as a UDP-glucose analog, 324
5-Ribosyluracil nucleotide
in soluble RNA, 23, 27
5-Ribosyluraciltriphosphate
competition with UTP, 23
Ribothymidylic acid
in soluble RNA, 23
Ricinine
biosynthesis, 444
intermediate in nicotinic acid synthesis, 444
structure, 445
Rickettsiae
enzymes in, 122
nucleic acid content, 122
Rosin acid
mass spectra of esters of, 764
Rous sarcoma virus
effect of fluorodeoxyuridine on, 487
infectious RNA, 130
Ruminococcus
leucine biosynthesis in, 369
Runner bean
sulfolipid from, 226
Rutin
transglycosylation in synthesis of, 324

S

Saccharomyces cerevisiae
biosynthesis of ornithine, 372
biotin synthesis, 456
thiazole precursors, 442
Salmonella - E-group
modification of O-antigens by phage, 326
sugar sequence modification by phage, 326
Salmonella enteritidis
tyvelose, 325
Salmonella paratyphi
biosynthetic enzymes for CDP-glucose, 323-25
paratose in, 325
Salmonella typhimurium
abequose, 325
effect of Mitomycin C, 494
leucine biosynthesis, 368
protein synthesis, 17
resistance to 2, 6-diaminopurine, 474
Sarcosine dehydrogenases
of liver mitochondria, 616
Sarcosomes
fatty acid synthesis, 254
oxidative processes, 590
Satellite
DNA bands, 48
Satellite transport
of amino acids coupled to outflux of potassium, 570
Satellite virus
in tobacco necrosis group, 86, 121
Saturation
of fatty acids, 259-63
Schiff base
enzyme-substrate, 649
formation between carbonyl group and catalyst, 648
in nucleophilic catalysis, 648-50
protonated to serve as electron sink, 649
Sciatic nerve
stimulation and subsequent alterations, 518
Scorbutic liver
pathway to glycogen in, 332
Secondary amines
catalysts for pyridoxal phosphate reactions, 649
Sedimentation coefficients
of viruses, 87
Selachyl alcohol III
functions of, 223

Self replication
of RNA, 25-27
Semiconductors
biological membranes as, 539
in electron movement in nerves, 538
Sepia pteridine
coenzyme in phenylalanine hydroxylation, 381
Serine
auxotrophy, 361
biosynthesis, 361-63
glyoxylate pathway, 361
conversion to phosphatidyl serine, 364
dehydrases, 362
formation from phosphoglycerate, 361
formation in photosynthesis studies, 361
in cephalin synthesis, 363
in uric acid synthesis, 363
precursor of cellular components, 363
transhydroxymethylase, 363
Serine-glycine
interconversion, 363
L-Serine hydroxymethyltransferase
assay, 189
mechanism of 1-C unit shuttle, 190
purification, 190
ultraviolet absorption, 190
Serotonin
as electron donor, 538
electron transfer in role as a smooth muscle contractant, 539
stimulation of phosphofructokinase by, 340
Servomechanisms
in nervous tissue, 515
Sheep
genetic control of potassium ion concentration in erythrocytes, 572
Shope papilloma virus
infectious DNA, 129
-SH reagents
inhibition of disulfide bonds in cell walls, 416
Sialic acid
in gangliosides, 232
key enzymes in synthesis, 337
precursor, 337
Silica gels
specific adsorption of dyes to, 645
Silicic acid
chromatography of glycolipids, 233
Siliclad
as an inactivating material for gas chromatography supports, 717
Silicone polymers
as nonselective liquid phases in gas chromatography, 714
Simian virus SV40
infectious DNA, 43
infectious phenol extracts, 129
in polio vaccines, 129
Single crystals
X-ray diffraction studies, 269
Single stranded DNA
of bacteriophage, 94, 113-14
Slime molds
DNA of, 48
SLR factor, see N-10 formyl pteroic acid
Smoke
analysis of components by gas chromatography, 737
Sodium-potassium pump
ATP as energy source, 557
genetic control of, 572
unequal concentration across membranes maintained by, 554
Sodium transport
ATP:ADP ratio in, 556
coupled with potassium transport, 556
examples of uncoupled transport, 557
Darmstoff in, 561
dependence on metabolism, 557
P^{32} incorporation in relation to sodium concentration, 567
redox pump mechanism, 558
Soluble RNA
amino-acyl specific, 29
characteristics, 22-24
countercurrent distribution in isolation of, 28
degradation, 35
fractionation, 28
heterogeneity, 28
leucine specific, 30
sensitivity to radiation, 26
separate synthetic pathway from ribosomal RNA, 27
valine specific, 29
Solvent drag
role in membrane transport, 555
Solvolysis
of various compounds, 640, 646
Sorbitol dehydrogenase
induction, 338
Soybean sprout ribonuclease
in RNA degradation, 35, 37
Sperm
DNA, 44-46
Spheroplasts
treated with fluropyrimidines, 488
Sphingomyelin
beef brain content, 516
configuration, 227
distribution, 217
glycine and serine as precursors, 363
synthesis of, 227-30
Sphingosine
configuration, 227
from palmityl coenzyme A and serine, 364
isolation by countercurrent distribution, 228
Sphingosine phosphorylcholine
characteristics, 228-30
Squalene
as a liquid phase for gas chromatography at room temperature, 714
biosynthesis, 777
mass spectra, 777
separation by gas chromatography, 731
Squid giant axon
analysis of extruded axoplasm, 539
Staphylococcus aureus
enzyme active on CDP-ribitol in, 323
lysis by fluorouracil, 488
mucopeptide-teichoic acid complexes in, 325
Starch
ADP-glucose as substrate for synthetase, 333
synthetase, 333
Starch zone electrophoresis
in DNA fractionation, 51
Statolon
in virus chemotherapy, 140
Steroid dehydrogenases
specificities and sources, 626-27
Steroid-enzyme interactions
relevance to hormone control, 688
Steroid hormones
action on
amino acid utilization, 690-95
aryl sulphamate synthesis, 687
dehydrogenases, 626, 683-87
kinases, 686
oxidases, 683
oxidative phosphoryla-

tion, 679-80
peroxidases, 683
phenolases, 682-83
protein synthesis, 689-90, 702
pyridoxal dependent enzymes, 687-88
reductases, 677-79
RNA, 695-98
transaminases, 700-702
transhydrogenases, 680-82
tryptophan pyrrolase, 698-700
aspects, 677-703
control of messenger RNA, 695
gas chromatography, 733, 745
"gene activation" by, 697
in cancer chemotherapy, 502
in vitro effect and in vivo counterpart, 677
mass spectra of, 762-65
mechanism of action, 677, 688
mechanism of protein structure alteration, 688
protection of lysosomes, 690
Stimulation
of nerves and subsequent alterations, 518
Strand-strand DNA cross-links
reversal by photoreactivation, 91
ultraviolet action on, 91
Straub diaphorase, see lipoyl dehydrogenase
Streptococci - group A
protoplasts in formation of hyaluronic acid, 328
Streptococcus fecalis
azauracil resistant mutant, 482
enzyme active on TDP-galactose in, 323
folic acid reductase from, 628
UDP-glucose-UDP-galactose interconversion in, 337
Streptomyces
leucine synthesis in, 368
phages for, 115
TDP-mannose in, 326
TDP-rhamnose in, 326
Streptomycin
antagonism of activity by manganese ion or polyamines, 501
as an inhibitor of cell-free protein synthesis, 501
binding to ribosomes in inhibition, 501
breakdown of RNA, 501
Streptovitacin A
anti-tumor activity of, 497
Stringent strains
and RNA synthesis, 24
Structural studies
by gas chromatography, 743
of fatty acids, 744
of steroids, 745
Structure
crystalline compared with dilute solution states of myoglobin, 278-79
Submaxillary gland
CMP-sialic acid enzyme activity in, 323
Succinic acid
oxidation, 579, 588-90
Succinic-coenzyme Q reductase
isolation of, 581
Succinic dehydrogenase
association of free radicals in mitochondria, 538
decreased activity after sciatic nerve stimulation, 518
ESR studies, 606-7
primary step in oxidation of succinate, 579
recombination into muscle particles after liberation, 597
redox potential, 606
role of ferrous iron in, 607
stereospecificity, 606
Succinic semialdehyde dehydrogenase
from monkey brain, 628
sensitivity to arsenite, 628
Sucrose
action of invertase, 335
fructose in synthesis of, 334
proof of structure by chemical means, 174
synthesis, 334-35
UDP-glucose in synthesis of, 334
utilization by yeast protoplasts, 335
Sucrose gradients
in virus purification, 87
Sugar ethers
in proofs of structure
Sugar nucleotides
precursors of cell wall polysaccharides, 325
substrates for glycogen synthetase, 329
Sugar phosphates
isolation of, 172
Sugars
amino, 169
conversion to derivatives for gas chromatography, 734, 743
degradation, 160-61
formation of dimers, 568
glycosidic bonds in formation of, 321
interconversion, 321
Sugar transport
competition for transport system, 567
"counter transport," 568
"downhill" carrier mediated, 567
effect of insulin, 569
influence of conformation of sugar, 567
preference for C-1 conformation, 567
model of sugar-carrier complex, 567
"uphill," 568
Sulfate
esters, 399
metabolism, 399
product of thiourea metabolism in thyroid gland, 411
Sulfatide
beef brain content, 516
Sulfhydral groups
evidence for noninvolvement in FAD binding, 614
increase after sciatic nerve stimulation, 518
Sulfite oxidase
characteristics, 616
Sulfoglutathione reductase
from pea tissue, 629
Sulfolipids
associated with myelin sheath, 226
biochemistry of, 226-27
cellular site of, 226
in chloroplasts, 226
Sulfonamides
effect on folate biosynthesis, 433-35
Sulfoxide
groupings, 402
reductases, 402
Sulfur
compounds
biochemistry of, 399-416
disulfides, 399-412
in protein, 399
metabolism in bacteria, 399
transfer from mercaptopyruvate, 407
S-Sulphoglutathione reductase
separation from glutathione reductase in pea plant, 401
Suramin

in restoration of excitability to protamine treated nervous tissue, 526
lysozyme inhibitor, 102
phage adsorption inhibitor, 102

T

Tagatose-6-phosphate
deamination product, 172
from galactosamine-6-phosphate, 337
metabolism to triose phosphate, 337
Taka-diastase ribonuclease T_1
action of, 26
purification of, 34
D-talose
from hygromycin, 172
Tartronic semialdehyde dehydrogenase
from Pseudomonas, 628
Tautomeric mutations
aminopurine in, 491
and related alteration in specific proteins, 491
bromouracil in, 491
Tay Sachs disease
abnormal brain lipid in, 526
TDP, see Thymidine diphosphate
Techoic acid
structure, 325
Template-RNA
in reticulocytes, 50
Terephthalanilides
anti-cancer activity, 502
Terpenes
mass spectra of, 764
Tetra-acetyl phytosphingosine VI
in Hansenula ciferri, 228
Tetracyanoquinodimethan
anisotropism, 538
in high conductivity organic compounds, 538
Tetrahydrofolic acid
as coenzyme form of Vitamin B, 431
assay with Pediococcus cerevisiae, 200
catalytic function, 185
conversion from dihydrofolate, 186-89
participation in 1-carbon metabolism, 190-208
at the level of formaldehyde, 189
at the level of formate, 192
at the level of methanol, 207
Tetrahydrofuran
in isolation and purification of gangliosides, 526
Tetrahymena pyriformis
lactate dehydrogenase from, 611
Tetraiodothroacetic acid
stimulation of amino acid incorporation into microsomes, 695
2,3,4,6-Tetra-o-methylglycopyranosyl chlorides
solvolysis, 161
T-even bacteriophages
characteristics, 95-100
Thermal conductivity
ionization detection systems, 712
Thiamine
biogenesis, 437-42
from pyrimidine and thiazole moieties, 438
in Neurospora, 440
in yeast, 439
role of thiazole phosphate, 438
catalyzed reactions, 649
deficiency
accumulation of lactate in lower brain stem, 532
transketolase in, 532
whole blood reduction, 532
Thiamine phosphate
synthetase in formation of, 440
Thiamine phosphate synthetase
in formation of thiamine phosphate, 440
Thiamine pyrophosphate
coenzyme form of Vitamin B_1, 438
formation by direct phosphorylation with ATP, 431, 438
inability of thiamine phosphate to form, 440
role in electron transport, 590-91
Thiamine pyrophosphokinase
activation by divalent cations, 441
formation of thiamine pyrophosphate, 441
Thiazole
biogenesis, 441-42
cysteine in formation of, 441
precursors in S. cerevisiae, 442
synthesis of thiamine by yeast, 438
Thiazole kinase
in formation of thiazole phosphate, 440
Thiazole monophosphate
formation from thiazole and ATP, 438
in direct reaction with pyrimidine in thiamine synthesis, 438
thiazole kinase in formation of, 440
Thioctic acid
stimulation of biotin production in conjunction with pimelic acid, 456
Thiocyanate
in rhodanese reaction, 409
requirement in thiourea metabolism, 411
6-Thioguanine
mechanism of action, 472
metabolism, 471-73
resistance to, 472
Thiol groups
in proteins, 399
in radiation injury and protection, 399
involvement in diuretic process, 412
oxidation of, 406
related compounds in treatment of leprosy and tuberculosis, 399
role of vitamin B_{12} in oxidation of, 407
Thiol phosphate
in transfer of phosphate to glucose, 336
Thiooxidase
action on diethyldithiocarbonate, 407
substrates, 407
Thiosulfate
in rhodanese reaction, 409
metabolism, 407-412
product in thiourea metabolism in thyroid gland, 411
Thiouracil
effect on infectious units of TMV RNA, 484
effect on infectivity of turnip yellow mosaic virus, 485
effect on replication of RNA viruses, 484
incorporation into RNA, 484
inhibition of β-galactosidase synthesis, 484
inhibition of leucine incorporation, 484
negative feedback mechanism in pyrimidine biosynthesis, 485
pathway of metabolism, 484
Thiourea
as a goiter producing agent, 411
desulfuration of, 411
inhibition of thyroid hormone by, 411

metabolism in thyroid gland, 411
Thiouridylic acid
incorporation into RNA, 484
Threonine
metabolism, 365
regulation of biosynthesis, 367
Threonine deaminase
identity with serine dehydrase, 362
Threonine dehydrase
action on L-serine, 365
induction by threonine, 365
inhibition by L-isoleucine, 370
stimulation by adenosine-5-phosphate, 365
Threonine dehydrogenase
NAD specific, 365
Thymidine
reversal of inhibition by fluorodeoxyuridine, 487
Thymidine diphosphate-galactose
enzyme active on
in mung bean, 323
in S. fecalis, 323
Thymidine diphosphate-galactose pyrophosphorylase
in S. fecalis, 324
Thymidine diphosphate-glucosamine
enzyme active on, 323
Thymidine diphosphate-glucose
conversion from TDP-mannose, 326
precursor of TDP-rhamnose, 326
Thymidine diphosphate-mannose
conversion to TDP-glucose, 326
intermediate in Streptomyces polysaccharide synthesis, 326
Thymidine diphosphate nucleotides
from E. coli, 323
Thymidine diphosphate-rhamnose
intermediate in Streptomyces polysaccharide synthesis, 326
precursor for streptose, 326
Thymidylate synthetase
as a virus initiated enzyme, 109
assay, 201
inhibition of, 109, 205
reaction, 201-7
comparison with 5-hydroxymethyl dCMP synthetase, 192
structure of dihydrofolate formed during, 204
tetrahydrofolate as hydrogen donor in, 199
separation, 109
sources, 201-3
Thymine
replacement in phage DNA, 49
synthesis in DNA, 206
synthesis in soluble RNA, 206
synthesis in T bacteriophage infection, 110
Thyroid gland
metabolism of thiourea in, 410
Thyroid hormone
effect in free fatty acid mobilization, 248
inhibition by thiourea, 411
Thyroid iodide peroxidase
in tyrosine iodination, 384
prosthetic group of, 384
Toad bladder
disulfide hormone action on membranes of, 412
Tobacco mosaic virus
mutants, 120
purification of, 87
transfer of genetic information, 120
Tobacco mosaic virus-ribonucleic acid
effect of thiouracil on, 484
nucleotide sequence, 37
T-odd bacteriophages
concentration of, 112
infection of protoplasts by, 113
relation to T-even phages, 112
see bacteriophages
Tofranil
effect on RNA of nerve cells, 524
Toluene-2,4,-diisocyanate
in ferritin-antibody coupling, 290
Transaminase
in formation of β-alanine in microorganisms, 421
inhibition by phosphate esters of B_6 compounds, 450
reversible transamination between pyridoxamine and oxaloacetate, 450
single hydrocortisone-induced enzyme in, 387
using pyruvate and pyridoxamine, 450
Transamination
between pyridoxamine and oxalacetate, 450
in conversion of glycine to glyoxylate, 362
of glyoxylate, 387
Transferance
in sugar metabolism, 321
Transferases
induced by phage, 112
Transformation
bacterial, 43
in sugar metabolism, 321
of UDP-glucose to UDP-rhamnose, 326
pyrophosphate bond phosphorolysis in, 324
to analog sensitivity and resistance with DNA, 467
Transforming principle
isolation of, 52
Transglucosidation
amylase activity in, 333-34
Transglycosylation
compounds involved, 322
instances of, 324-25
in synthesis of rutin, 324
of hydroxymethylcytosine of phage DNA, 324
Transitions
in depurinated mutants, 93
"Transition" error hypothesis
support for, 491
Transketolase
in neuropathology of thiamine deficiency, 532
leading to biochemical defect in thiamine deficiency, 532
relative activity in white and gray matter, 532
Transport
biological, 553-72
electron, 537-41, 590
ion, 527-52, 561
role of ATP-ase, 528
through biological membranes, 527
Transport systems
adaptive formation, 570
chromosome marker in E. coli, 572
genetic control of, 570
inducible systems, 570-71
in protoplasts, 571
Transulfuration
in microorganisms, 399
Transversions
in bacteriophage, 93-95
in mechanism of acridine induced mutagenesis, 95
Triacetyl dihydrosphingosine VII
from Hansenula ciferri, 288
Trichloroacetonitrile
as a condensing agent in formation of polynucleotides, 173
Tricyanoaminopropene

and decrease in glial RNA, 524
and increase in neuron protein and RNA, 524
effect on cytochrome oxidase, 524
Triglycerides
biosynthesis, 263-64
separation by gas chromatography, 736
Trignopsis variabilis
morphology in relation to methyl donor in medium, 327
Triosephosphate dehydrogenase
multi-activities of, 627
NAD+linked, 627
Triphosphoinositol
beef brain content, 516
Triplets
of DNA bases, 92
Triton WR 1339
in resistance of chylomicrons to lipase, 244
Trypanosoma rhodesiense
L-α-glycerophosphate oxidase from, 616
Tryptophan
conversion of indole to, 377
conversion to formyl kynurenine, 443
hydroxylation in liver, 380
in formation of phenoxazinone chromophore of Actinomycin, 380
metabolism, 376-79
pathway to nicotinic acid, 443-44
synthetase in microorganisms, 376
A and B components in, 377
Tryptophan pyrrolase
in conversion of tryptophan to formyl-kynurenine, 443
inhibition by puromycin, 378
regulation of activity, 443
role of hematin in activity, 443
role of hydrocortisone in activity, 378
substrate induction, 378
by steroids, 698
Tuberculosis
thiol-related compounds in treatment of, 399
Tumor viruses
papilloma, 129
polyoma, 129
RNA, 130
role of infectious nucleic acid in, 129
SV 40, 129
Turnover
of phage induced RNA, 110
of phospholipids under choline influence, 248
of phosphoprotein in ion transport, 565-67
Tyrosinases
identification of four isozymes in Neurospora, 382
oxidation of insulin by, 383
stable and labile forms, 382
Tyrosine
inhibition of p-hydroxyphenylpyruvic acid oxidase, 381
iodination of, 384
metabolism of, 381-84
adrenal hydroxylase in, 383
Tyrosine-glutamic transaminase
induction by hydrocortisone, 386, 700
stimulation in adrenalectomized animals, 386

U

"u" locus
in ultraviolet sensitivity, 72
Ubiquinone, see coenzyme Q
UDP, see Uridine diphosphate
Ultramicrochemistry
of the nervous system, 520
Ultraviolet absorption
loosening of hydrogen bonds by, 91
mutagenic properties, 67
of DNA, 47, 67
pyrimidine dimerization by, 91
"u" locus relationship, 72
Uncoating of DNA
detection of, 124
heterologous activation, 124
relation to fibroma-myxoma transformation, 124
stimulated by infection, 124
Unsaturation
of fatty acids, 261-62
Uphill transport
definition, 553
of amino acids, 554
of sugars, 554, 567-68
energy requirement, 568
inhibition by cardiac glycosides, 568
sodium dependency, 568
role of ATP:ADP ratio, 557
role of sodium-potassium pump, 554, 556-67
redox pump mechanism, 558
Uracil
incorporation into tumor RNA, 20
Uranyl acetate
uptake of stain correlated with nucleic acid in viruses, 88
Urea
denaturation of polyvinylpyrrolidone, 287
effect on proteins, 286-88
in solubility study of amino acids, 287
interference with ribonuclease reformation, 286
Urea cycle
effect of dietary factors, 373
inhibition by methylaspartate, 373
metabolism of, 373
role of ornithine cycle in, 373
Urethane
potentiation of azauridine inhibition, 484
Uric acid
glycine and serine in synthesis of, 363
reduction to xanthine, 601
Uridine diphosphate-acetylglucosamine
in pneumococcal capsular polysaccharides, 327
Uridine diphosphate-N-acetylglucosamine-6-phospho-1-galactoside
linkage of, 323
Uridine diphosphate-N-acetyllactosamine
in milk, 323
Uridine diphosphate-N-acetyllactosamine fucoside
in milk, 323
Uridine diphosphate-galactose
increase in lens of galactose-fed rats, 336
in S. fecalis, 324
interconversion with UDP-glucose, 336
Uridine diphosphate-galactose-4-epimerase
absence in E. coli mutant, 337
transfer of galactose in absence of, 326
Uridine diphosphate-galacturonic acid
in pneumococcus capsular polysaccharides, 327
source in Phaseola aureus, 321
Uridine diphosphate-glucose

as glucosyl donor in glucosylation, 325
fluorouracil analogs, 488
in competitive inhibition of phosphorylase
in S. fecalis, 324
interconversion with UDP-galactose, 336
synthesis in E. coli, 324
transformation to UDP-rhamnose, 326
Uridine diphosphate dehydrogenase
activity on an analog substrate, 324
in formation of UDP-iduronic acid, 328
Uridine diphosphate-glucose-4-epimerase
in S. fecalis, 324
NAD requirement for activity, 328
Uridine diphosphate-glucose-glycogen glucosyl transferase
analogy to phosphorylase, 330
complex mechanism of activation, 330
effect of glucose-6-phosphate, 329
effect of insulin, 330
inactivation, 330
in biosynthesis of glycogen, 329
inhibition, 330-31
by eyestalk extract, 330
magnesium requirement, 329
occurrence, 329
see glycogen synthetase
Uridine diphosphate-glucose pyrophosphorylase
E. coli mutants lacking, 324
Uridine diphosphate-iduronic acid
role of UDP-glucose hydrogenase in formation of, 328
Uridine diphosphate-rhamnose
in pneumococcus polysaccharides, 326
transformation from UDP-glucose, 326
Uridine kinase
nonspecificity of, 483
Uridine monophosphate
in soluble RNA, 36
Uridine triphosphate
replacement of, 18
Urocanic acid
increased excretion in folic acid deficiency, 374
Uronic acid
degradation of polysaccharides containing, 334

V

Vaccinia
and pox viruses, 122-24
DNA synthesis by extracts of infected cells, 125
electron microscope observation, 122
induced enzymes, 125
inhibition of, 125
inhibition
by Actinomycin D, 21
by azauridine, 484
by bromodeoxyuridine, 487
by fluorodeoxyuridine, 487
nucleic acid content, 122
penetration via "viropexis," 124
purification, 124
ribosyl derivatives in chemotherapy, 140
L-Valine
biosynthesis, 367-69
relation to pantoic acid biosynthesis, 420
Vancomycin
inhibition of cell wall synthesis, 326
role in accumulation of nucleotides, 326
Vasopressin
action on mitochondrial membranes, 413
Venom
in RNA degradation, 34
Vibrio cholerae
neuraminidase in, 526
Vinca alkaloids
anti-cancer activity, 502
Virion
of virus particles, 84
structure, 89
Viropexis
in penetration of vaccinia virus, 124
Viruses
animal, 121-39
DNA, 122-30
RNA, 128, 130-31
bacterial, 90-119
adsorption, 101-2
induced protein synthesis, 106-112
mutagenesis, 92-95
"mutational heterozygosis," 93
nucleic acid transfer, 103-6
single-stranded DNA in, 114
biochemistry of, 83-140
characterization, 88-89
chemotherapy, 139-40
classification, 87-89
DNA
characterization, 97
fractionation, 97
role of protein in replication, 103
electron microscope observation, 84, 88
equilibrium ultracentrifugation, 89
ether sensitivity, 89
fluorescent observation of synthesis sites, 84
insect, 128
isolation, 87-88
molecular weight, 89
plant, 119-21
purification, 84
tumor, 128-31
X-ray techniques, 88
Vitamin B_6 kinases
inhibitors of, 448
in phosphorylation, 448
Vitamin B_6 oxidases
dual activities of, 449
in oxidation of pyridoxine phosphate, 449
Vitamins
A
deficiency effect in amino sugar incorporation, 328
active forms of B vitamins, 419
B_1, see thiamine
B_6, 447-50
coenzyme forms, 447
kinases, 448
metabolic transformations, 450
B_{12}, 450-55
alternate pathways of synthesis, 452
1-amino-2-propanol moiety, 453
coenzyme forms, 453-54
corrin ring, 450
nonenzymatic catalysts in oxidation of thiols to disulfides, 407
nucleoside moiety, 452
structure, 451
see cyanocobalamin
B_{12r}
in study of BC to BC coenzyme conversion, 455
separation by gas chromatography, 740
water soluble
biogenesis, 419
see specific vitamins
Volutin
in phosphorylation of glucose, 336

W

Wallerian degeneration
in optic and tibial nerves, 521
Water
hydrogen bonds in, 534
"iceberg," 533
in general anesthesia, 533
Watson-Crick model
of DNA configuration, 54
Wheat flour
enzyme active on ADP-glucose, 323
Wood extractives
study by gas chromatography, 738
Wound healing
role of alkoxyglycerols, 223

X

Xanthine oxidase
characteristics, 601-4
constituents of, 601
ESR data, 603
from Clostridium cyclosporum, 601
from milk, 601
inhibitors, 188, 473, 602
in reduction of uric acid, 601
molybdenum requirement, 604
proposed reaction mechanism, 603
substrate free radicals, 602
Xanthomonas pruni
tryptophan pathway to niacin, 444
X-ray
diffraction
DNA configuration, 54
myoglobin, 269
resolution of, 269
single crystals, 269
effect on enzymes of carbohydrate metabolism, 322
microradiography
dry weights of nerve cell constituents, 522
Xylanases
from Pericularia oryzae, 334
Xylitol
as a dehydrogenase substrate, 337

Y

Yeast
lactate oxidizing enzymes from, 612
lysine pathway in, 365
phosphorolysis in, 324
polyol dehydrogenases in, 338
polysaccharide degradation in, 334
protoplasts, 335
utilization of sucrose by, 335
RNA, 28

Z

Zone electrophoresis
in tobacco mosaic virus, 51, 87

CUMULATIVE INDEX

VOLUMES 28 TO 32

INDEX OF CHAPTER TITLES

AMINO ACIDS, PEPTIDES, PROTEINS
Biosynthesis:
J. L. Simkin, 28: 145-70; G. N. Cohen and F. Gros, 29: 525-46; P. Berg, 30: 293-324; M. V. Simpson, 31: 333-68
Chemistry:
P. Edman, 28: 69-96; R. Schwyzer, 29: 183-206; B. Keil, 31: 139-72
Metabolism:
W. E. Knox and E. J. Behrman, 28: 223-56; S. Udenfriend, H. Weissbach and C. Mitoma, 29: 207-60; C. Gilvarg, 30: 239-68; E. Adams, 31: 173-212; W. Sakami and H. Harrington, 32: 355-98
Structure:
R. L. Hill, J. R. Kimmel and E. L. Smith, 28: 97-144; G. E. Perlmann and R. Diringer, 29: 151-82; B. S. Harrap, W. B. Gratzer and P. Doty, 30: 269-92; F. M. Richards, 32: 269-300; W. A. Schroeder, 32:301-20

CANCER
E. P. Anderson and L. W. Law, 29: 577-608; E. D. Day, 31: 549-68; R. W. Brockman and E. P. Anderson, 32: 463-512
Carcinogenesis:
E. C. Miller and J. A. Miller, 28: 291-320

CARBOHYDRATES
Chemistry:
W. Pigman, K. Nisizawa and S. Tsuiki, 28: 15-38; W. J. Whelan, 29: 105-30; A. B. Foster, 30: 45-70; G. O. Aspinall, 31: 79-102; R. U. Lemieux and D. R. Lineback, 32: 155-84
Metabolism:
H. Holzer, 28: 171-222; A. Beloff-Chain and F. Pocchiari, 29: 295-346; A. Sols, 30: 213-38; O. Touster, 31: 407-50; E. Cabib, 32: 321-54

CAROTENOIDS
See Pigments, carotenoids

CELLS
Culture of:
L. Levintow and H. Eagle, 30: 605-40
Division of:
D. Mazia, 30: 669-88

CHOLESTEROL
See steroids, cholesterol

CHROMATOGRAPHY
Gas-Phase:
S. R. Lipsky and R. A. Landowne, 29: 649-68; E. C. Horning and W. J. A. VandenHeuvel, 32: 709-54

CLINICAL BIOCHEMISTRY
C. G. Holmberg and R. Blomstrand, 28: 321-42; I. MacIntyre and I. D. P. Wootton, 29: 635-48

CONNECTIVE TISSUE
S. Roseman, 28: 545-78

ENZYMES
Glycosidases and Transglycosidation:

R. A. Dedonder, 30: 347-82
Mechanism:
P. D. Boyer, 29: 15-44; W. P. Jencks, 32: 639-76
Oxygenases and Hydroxylases:
L. Massart and R. Vercauteren, 28: 527-44
Proteolytic:
B. S. Hartley, 29: 45-72
Transferases:
O. Hoffmann-Ostenhof, 29: 73-104; L. E. Hokin and M. R. Hokin, 32: 553-78

FUNGI
See Micro-organisms

GENETICS
J. R. S. Fincham, 28: 343-64; R. L. Sinsheimer, 29: 503-24; C. Levinthal and P. F. Davison, 30: 641-86; J. Larner, 31: 569-88

HORMONES
Protein:
R. Acher, 29: 547-76; (polypeptide) K. Hofmann, 31: 213-46
Steroid:
See Steroids, hormones

IMMUNOCHEMISTRY
F. Haurowitz, 29: 609-34; R. R. Porter and E. M. Press, 31: 625-52
Immunopolysaccharides:
See Carbohydrates, immunopolysaccharides
Isoprenoid Compounds:
L. D. Wright, 30: 525-48

INSECTS
See Nutrition

LIPIDS
E. Klenk and H. Debuch, 28: 39-68; D. J. Hanahan and G. A. Thompson, Jr., 32: 215-40
Chemistry:
J. H. Law, 29: 131-50; J. Asselineau and E. Lederer, 30: 71-92; M. M. Rapport and W. T. Norton, 31: 103-38
Metabolism:
P. K. Stumpf, 29: 261-94; R. G. Langdon and A. H. Phillips, 30: 189-212; S. J. Wakil, 31: 369-406; J. F. Mead, 32: 241-68; K. Biemann, 32: 755-80

MICRO-ORGANISMS
R. Bentley, 31: 589-624

MINERAL METABOLISM
See Nutrition, mineral metabolism

MUSCLE
S. V. Perry, 30: 473-98

NEUROCHEMISTRY
F. N. LeBaron, 28: 579-604; R. H. S. Thompson and G. R. Webster, 29: 365-90; E. Roberts and C. F. Baxter, 32: 513-52

NUCLEIC ACIDS
L. F. Cavalieri and B. H. Rosenberg, 31: 247-70; A. Stevens, 32: 15-42; S. Kit, 32: 43-82
Enzymology:
C. A. Dekker, 29: 453-74; M. Grunberg-Manago, 31: 301-32
Metabolism and Biosynthesis:
R. Abrams, 30: 165-88; E. S. Canellakis, 31: 271-300
Purines and Pyrimidines:
S. C. Hartman and J. M. Buchanan, 28: 365-410; A. M. Michelson, 30: 133-64

NUTRITION

R. E. Olson, 29: 467-98; M. O. Schultze, 29: 391-412; W. N. Pearson and W. J. Darby, 30: 325-46; O. Mickelsen, 31: 515-48; H. L. House, 31: 653-72

Mineral Metabolism:
E. J. Underwood, 28: 499-526

OXIDATIONS, BIOLOGICAL
M. Klingenberg and T. Bücher, 29: 669-708; M. Morrison, 30: 11-44; O. Hayaishi, 31: 25-46; A. L. Lehninger and C. L. Wadkins, 31: 47-78; V. Massey and C. Veeger, 32: 579-638

PEPTIDES
See Amino Acids, Peptides, Proteins

POLYAMINES
H. Tabor, C. W. Tabor and S. M. Rosenthal, 30: 579-604

PORPHYRINS AND HEMOPROTEINS
E. Margoliash, 30: 549-78

PREFATORY CHAPTERS
E. F. Terroine, 28: 1-14; H. O. L. Fischer, 29: 1-14; J. H. Northrop, 30: 1-10; W. M. Clark, 31: 1-24; A. Szent-Györgyi, 32: 1-14

PROTEINS
See Amino Acids, Peptides, Proteins

PURINES AND PYRIMIDINES
See Nucleic Acid, purines and pyrimidines

RUMINANTS
See Nutrition, of ruminants

STEROIDS
Hormones:
L. L. Engel and L. J. Langer, 30: 499-524; G. M. Tompkins and E. S. Maxwell, 32: 677-708

Metabolism:
P. A. Katzman, E. A. Doisy, Jr., J. T. Matschiner and E. A. Doisy, 28: 257-90

SULFUR COMPOUNDS
J. D. Gregory and P. W. Robbins, 29: 347-64; S. Black, 32: 399-418

U. S. S. R.
Biochemistry in:
J. A. Stekol, 28: 605-36

VIRUSES
L. M. Kozloff, 29: 475-502; S. S. Cohen, 32: 83-154

VITAMINS
Fat-Soluble:
F. Bro-Rasmussen and W. Hjarde, 30: 447-72; G. A. J. Pitt and R. A. Morton, 31: 491-514

Water-Soluble:
M. K. Horwitt (Thiamine, Riboflavin, Pantothenic Acid, Nicotinamide, Lipoic Acid), 28: 411-38; M. E. Coates and J. W. G. Porter (Vitamin B_{12}, Folic Acid, Ascorbic Acid, Biotin, Vitamin B_6, Miscellaneous), 28: 439-66; J. J. Burns and A. H. Conney (Ascorbic Acid, Nicotinic Acid, Vitamin B_6, Biotin, Inositol), 29: 413-36; J. S. Dinning (Vitamin B_{12}, Folic Acid, Thiamine, Riboflavin, Pantothenic Acid), 29: 437-52; A. E. Axelrod and C. J. Martin (Water-Soluble Vitamins, Part I), 30: 383-408; G. W. E. Plaut (Water-Soluble Vitamins, Part II), 30: 409-46; E. L. R. Stokstad, 31: 451-90; M. Friedkin (Enzymatic Aspects of Folic Acid), 32: 185-214; G. M. Brown (Biogenesis of the Water-Soluble Vitamins), 32: 419-62

X-RAY STUDIES OF STRUCTURE
A. Rich and D. W. Green, 30: 93-132

SEP 25 1963

VOLUMES 28 TO 32

A

Abrams, R., 30: 165
Acher, R., 29: 547
Adams, E., 31: 173
Anderson, E. P., 29: 577; 32: 463
Aspinall, G. O., 31: 79
Asselineau, J., 30: 71
Axelrod, A. E., 30: 383

B

Baxter, C. F., 32: 513
Behrman, E. J., 28: 223
Belogg-Chain, A., 29: 295
Bentley, R., 31: 589
Berg, P., 30: 293
Biemann, K., 32: 755
Black, S., 32: 399
Blomstrand, R., 28: 321
Brockman, R. W., 32: 463
Bro-Rasmussen, F., 30: 447
Brown, G. W., 32: 419
Buchanan, J. M., 28: 365
Bücher, T., 29: 669
Burns, J. J., 29: 413

C

Cabib, E., 32: 321
Canellakis, E. S., 31: 271
Cavalieri, L. F., 31: 247
Clark, W. M., 31: 1
Coates, M. E., 28: 439
Cohen, G. N., 29: 525
Cohen, S. S., 32: 83
Conney, A. H., 29: 413

D

Darby, W. J., 30: 325
Davison, P. F., 30: 641
Day, E., 31: 549
Debuch, H., 28: 39
Dedonder, R. A., 30: 347
Dekker, C. A., 29: 453
Dinning, J. S., 29: 437
Diringer, R., 29: 151
Doisy, E. A., 28: 257
Doisy, E. A., Jr., 28: 257
Doty, P., 30: 269

E

Eagle, H., 30: 605
Edman, P., 28: 69
Engle, L. L., 30: 499

F

Fincham, J. R. S., 28: 343
Fischer, H. O. L., 29: 1
Foster, A. B., 30: 45
Friedkin, M., 32: 185

G

Gilvarg, C., 30: 239
Gratzer, W. B., 30: 269
Green, D. W., 30: 93
Gregory, J. D., 29: 347
Gros, F., 29: 525
Grunberg-Manago, M., 31: 301

H

Hanahan, D. J., 32: 215
Harrap, B. S., 30: 269
Harrington, H., 32: 355
Hartley, B. S., 29: 45
Hartman, S. C., 28: 365
Haurowitz, F., 29: 609
Hayaishi, O., 31: 25
Heppel, L. A., 27: 613
Hill, R. L., 28: 97
Hjarde, W., 30: 447
Hoffmann-Ostenhof, O., 29: 73
Hofmann, K., 31: 213
Hokin, L. E., 32: 553
Hokin, M. R., 32: 553
Holmberg, C. G., 28: 321
Holzer, H., 28: 171
Horning, E. C., 32: 709
Horwitt, M. K., 28: 411
House, H. L., 31: 653

J

Jencks, W. P., 32: 639

K

Katzman, P. A., 28: 257
Keil, B., 31: 139
Kimmel, J. R., 28: 97
Kit, S., 32: 43
Klenk, E., 28: 39
Klingenberg, M., 29: 669
Knox, W. E., 28: 223
Kozloff, L. M., 29: 475

L

Landowne, R. A., 29: 649
Langer, L. J., 30: 499
Larner, J., 31: 569
Law, J. H., 29: 131
Law, L. W., 29: 577
LeBaron, F. N., 28: 579
Lederer, E., 30: 71
Lehninger, A. L., 31: 47
Lemieux, R. U., 32: 155
Levinthal, C., 30: 641
Levintow, L., 30: 605
Lineback, D. R., 32: 155
Lipsky, S. R., 29: 649

M

MacIntyre, L., 29: 635
Margoliash, E., 30: 549
Martin, C. J., 30: 383
Massart, L., 28: 527
Massey, V., 32: 579
Matschiner, J. T., 28: 257
Maxwell, E. S., 32: 677
Mazia, D., 30: 669
Mead, J. F., 32: 241
Michelson, A. M., 30: 133
Mickelsen, O., 31: 515
Miller, E. C., 28: 291
Miller, J. A., 28: 291
Mitoma, C., 29: 207
Morrison, M., 30: 11
Morton, R. A., 31: 491

N

Nisizawa, K., 28: 15
Northrop, J. H., 30: 1
Norton, W. T., 31: 103

O

Olson, R. E., 28: 467

P

Perlmann, G. E., 29: 151
Pearson, W. N., 30: 325
Perry, S. V., 30: 473
Phillips, A. H., 30: 189
Pigman, W., 28: 15
Pitt, G. A. J., 31: 491
Plaut, G. W. E., 30: 409
Pocchiari, F., 29: 295
Porter, J. W. G., 28: 439
Porter, R. R., 31: 625
Press, E. M., 31: 625

R

Rapport, M. M., 31: 103
Rich, A., 30: 93
Richards, F. M., 32: 269
Robbins, P. W., 29: 347
Roberts, E., 32: 513
Roseman, S., 28: 545
Rosenberg, B. H., 31: 247
Rosenthal, S. M., 30: 579

S

Sakami, W., 32: 355
Schroeder, W. A., 32: 301
Schultze, M. O., 29: 391

SEP 25 1963

Schwyzer, R., 29: 183
Simkin, J. L., 28: 145
Simpson, M. V., 31: 333
Sinsheimer, R. L., 29: 503
Smith, E. L., 28: 97
Sols, H., 30: 213
Stekol, J. A., 28: 605
Stevens, A., 32: 15
Stokstad, E. L. R., 31: 451
Stumpf, P. K., 29: 261
Szent-György, A., 32: 1

T

Tabor, C. W., 30: 579
Tabor, H., 30: 579
Terroine, E. F., 28: 1
Thompson, G. A., 32: 215
Thompson, R. H. S., 29: 365
Tompkins, G. M., 32: 677
Touster, O., 31: 407
Tsuiki, S., 28: 15

U

Udenfriend, S., 29: 207
Underwood, E. J., 28: 499

V

VandenHeuvel, W. J. A., 32: 709
Veeger, C., 32: 579
Vercauteren, R., 28: 527

W

Wadkins, C. L., 31: 47
Wakil, S. J., 31: 369
Webster, G. R., 29: 365
Weissbach, H., 29: 207
Whelan, W. J., 29: 105
Wootton, I. D. P., 29: 635
Wright, L. D., 30: 525

SEP 25 1963

Copyright